

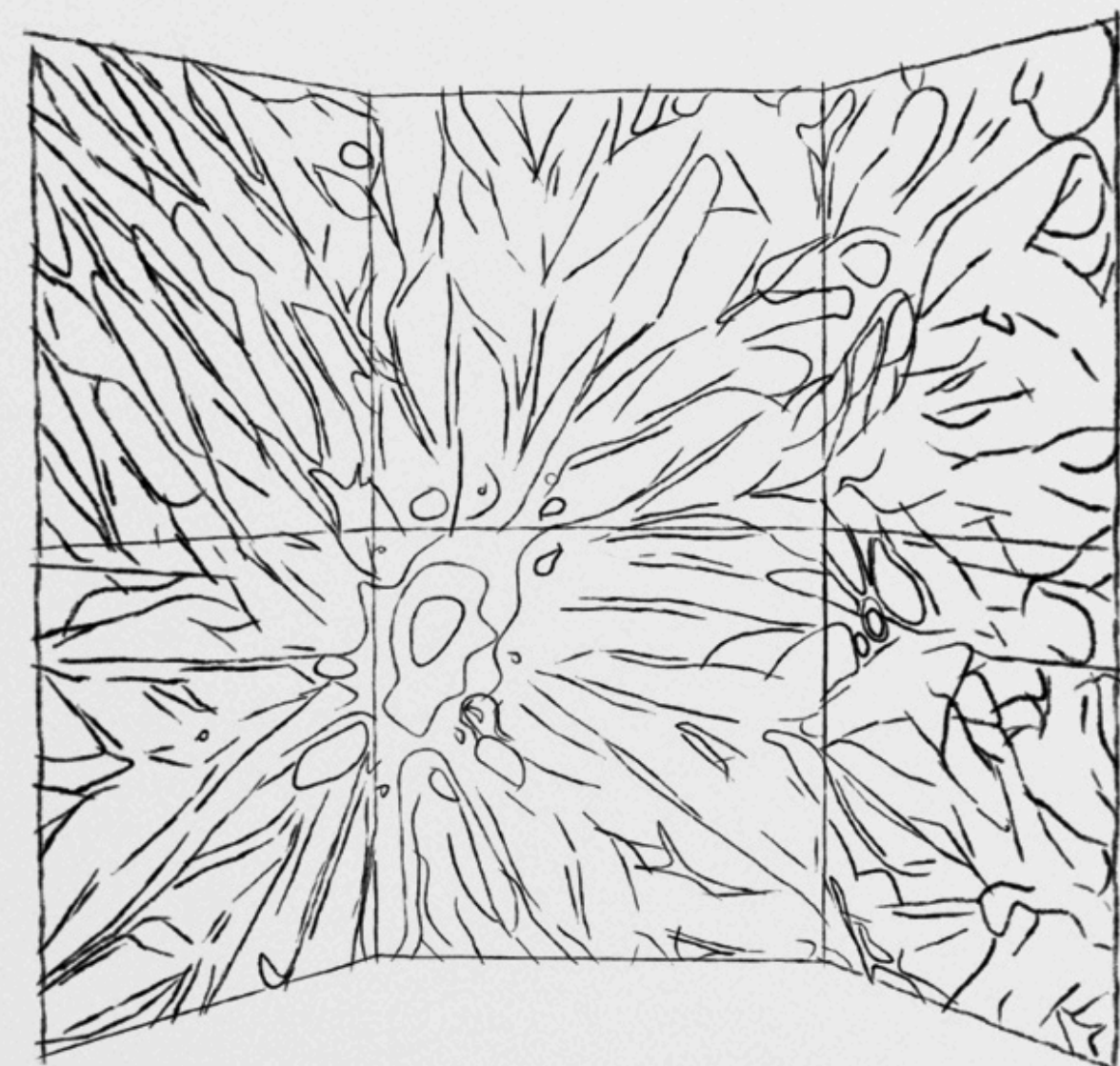
# LIGHT & SHADOW

Prof. Margo Majewska, Senior Adjunct Professor  
Software: Rhino, Adobe Illustrator, Adobe Photoshop, Sketchup, TwinMotion  
Award: LIT Lighting Design Award Winner



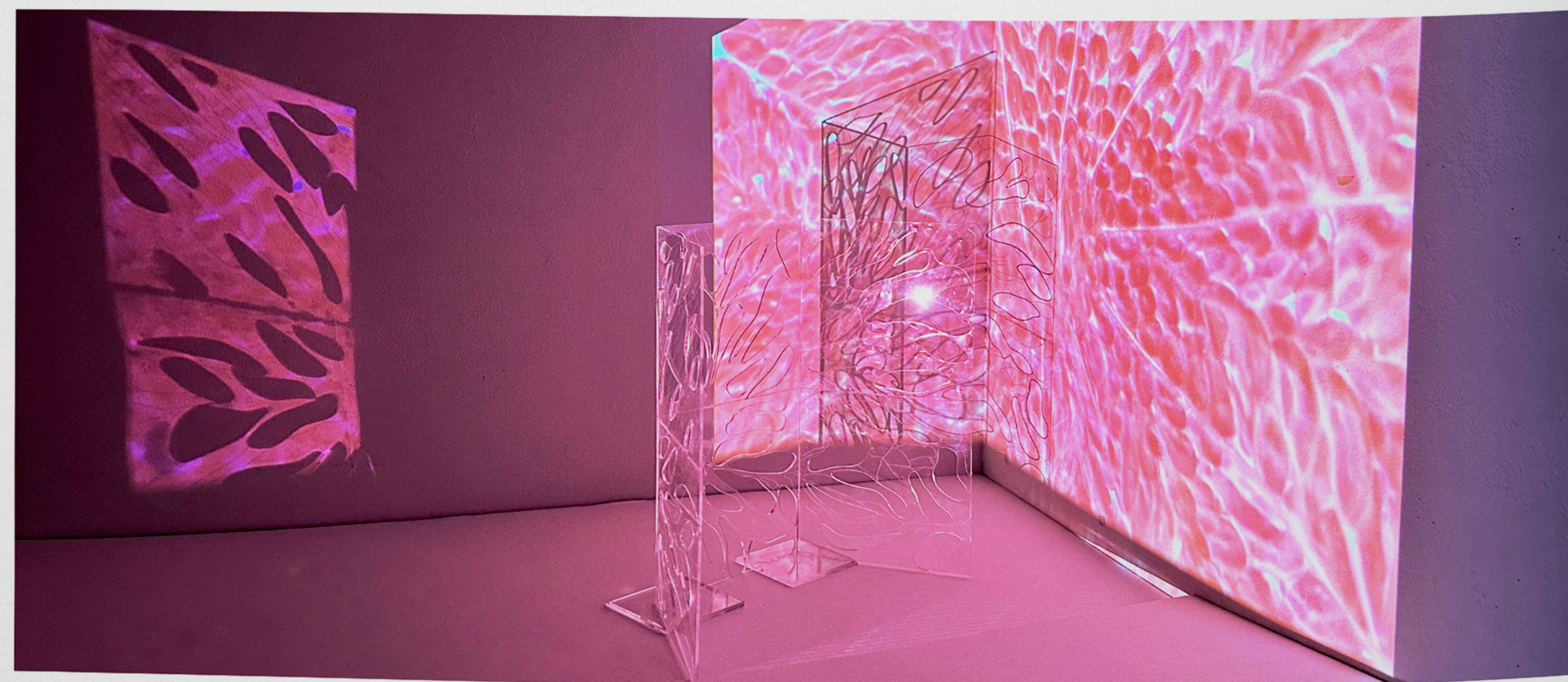
## INSPIRATION

The purpose of this lighting design is to create an immersive and interactive experience that explores the dynamic relationship between light, shadow, and spatial perception, inspired by natural patterns and phenomena.



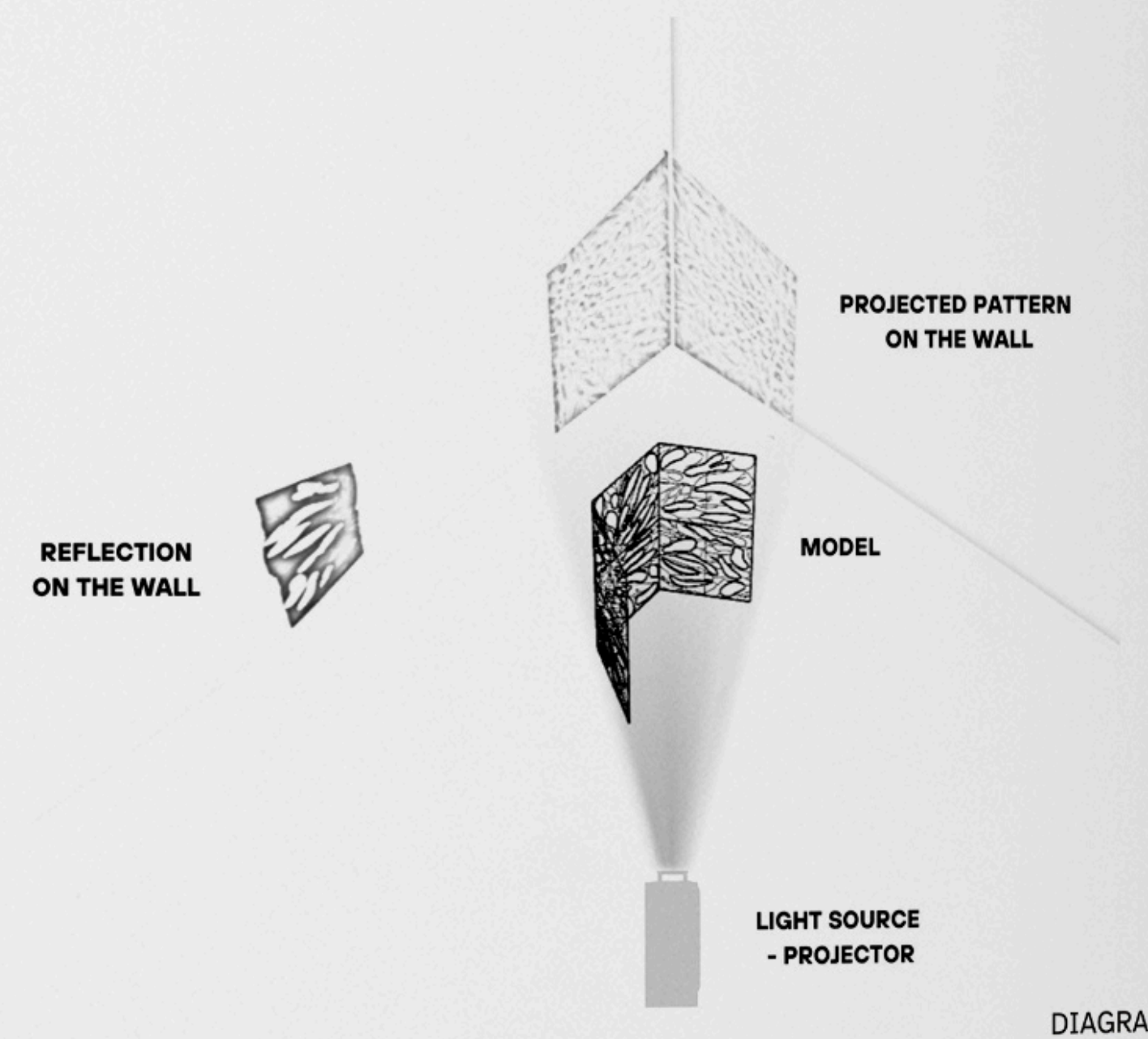
SKETCH OF THE MODEL

Drawing inspiration from the intricate translucency of grapefruit pulp, I embarked on an exploration of light and texture, using a model to uncover new possibilities and guide future experiments.



I laser-cut a transparent acrylic model and experimented with a projector to study the interplay of light, shadow, and translucency, uncovering how organic patterns influence spatial perception and ambiance.

## EXPERIMENTATION



This diagram illustrates how light interacts with my model, mimicking natural illumination by projecting and reflecting the grapefruit-inspired pattern, demonstrating the dynamic relationship between light, shadow, and space.

## FINAL DESIGN

The final design merges dynamic lighting and user interaction, bringing explorations to life in two immersive gallery spaces where evolving light and shadow enhance spatial perception and engagement.

In Gallery 2, visitors step onto platforms and rotate an installation featuring a grapefruit-inspired pattern. As they move, the laser-cut acrylic structure casts intricate light and shadow projections, changing dynamically with each rotation. This interaction allows users to physically engage with the light, experiencing how movement alters spatial perception and the play of illumination.



In Gallery 1, programmable LED strips embedded in walls and ceilings recreate the shifting light conditions from sunrise to sunset. As visitors walk through the space, their presence influences the intensity and direction of shadows, simulating the organic interplay of light in a desert landscape. This creates a continuously evolving environment where users become an integral part of the lighting experience.

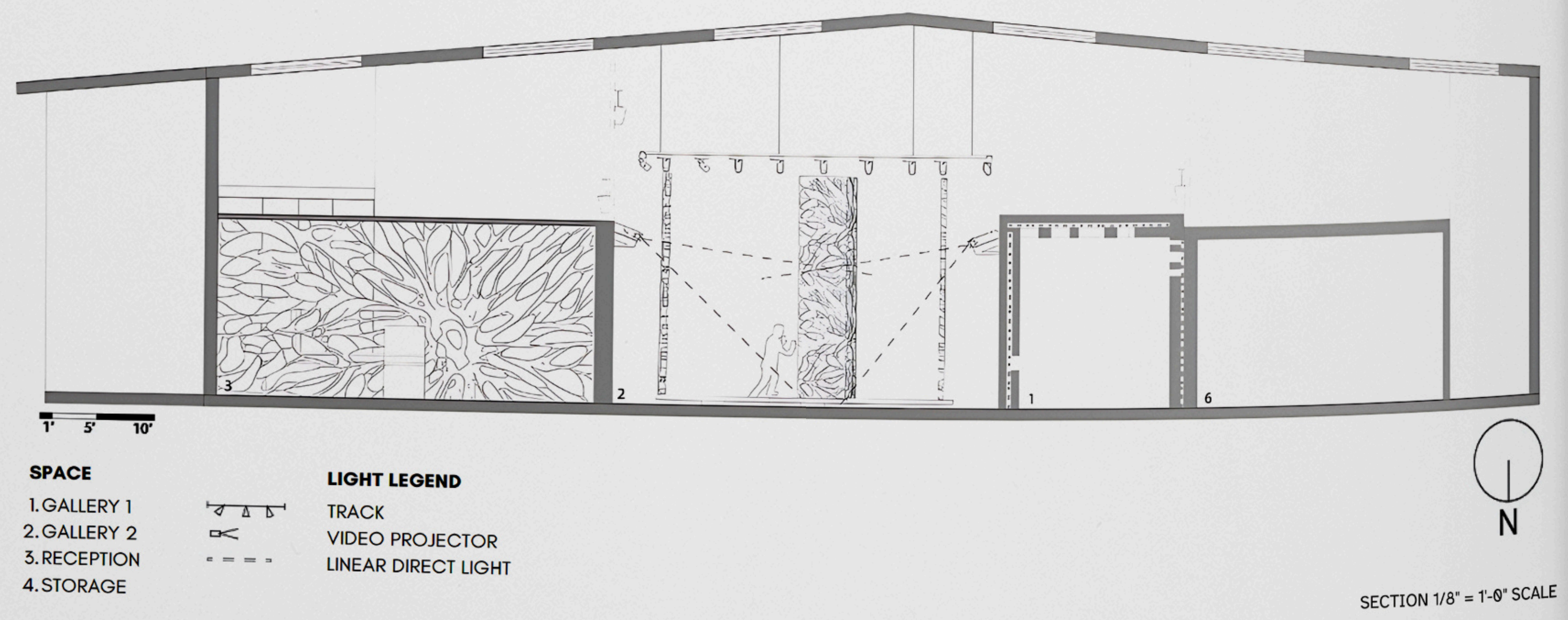
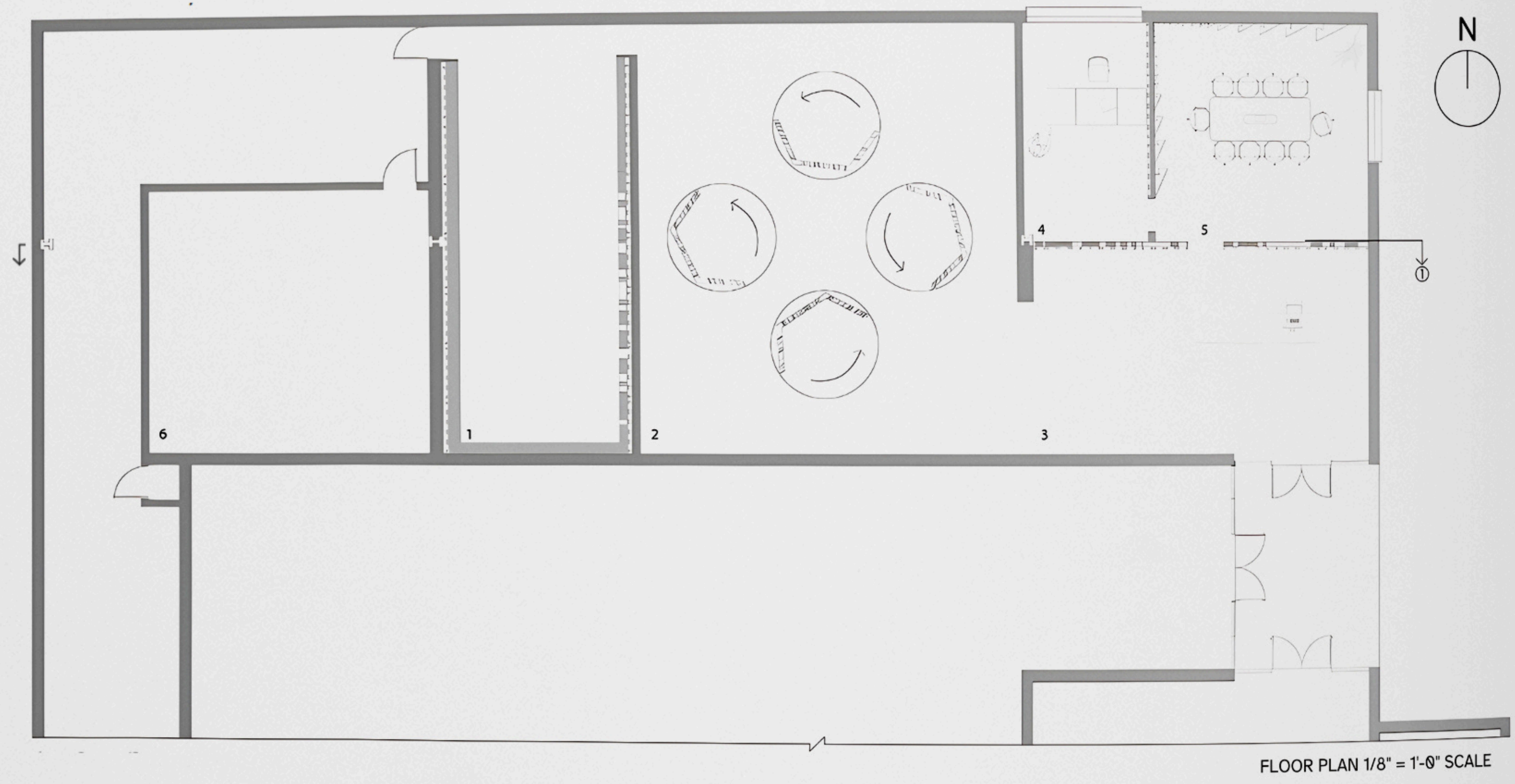


This lighting design enhances visitor experience by transforming static spaces into dynamic environments where shifting light and shadow create a deeper connection to natural illumination. It improves the space's function by providing visual comfort and interactive engagement, while its dynamic reflections foster a warm, fluid atmosphere.

# Altman Siegel

1150 25TH ST, SAN FRANCISCO, CA 94107 - 3,460 SQFT

The gallery's lighting design incorporates advanced technology to replicate natural lighting effects, encouraging a profound appreciation for these phenomena. Glass-walled offices, both private and general, maintain visual connectivity to visitor experiences, fostering inclusivity and engagement.



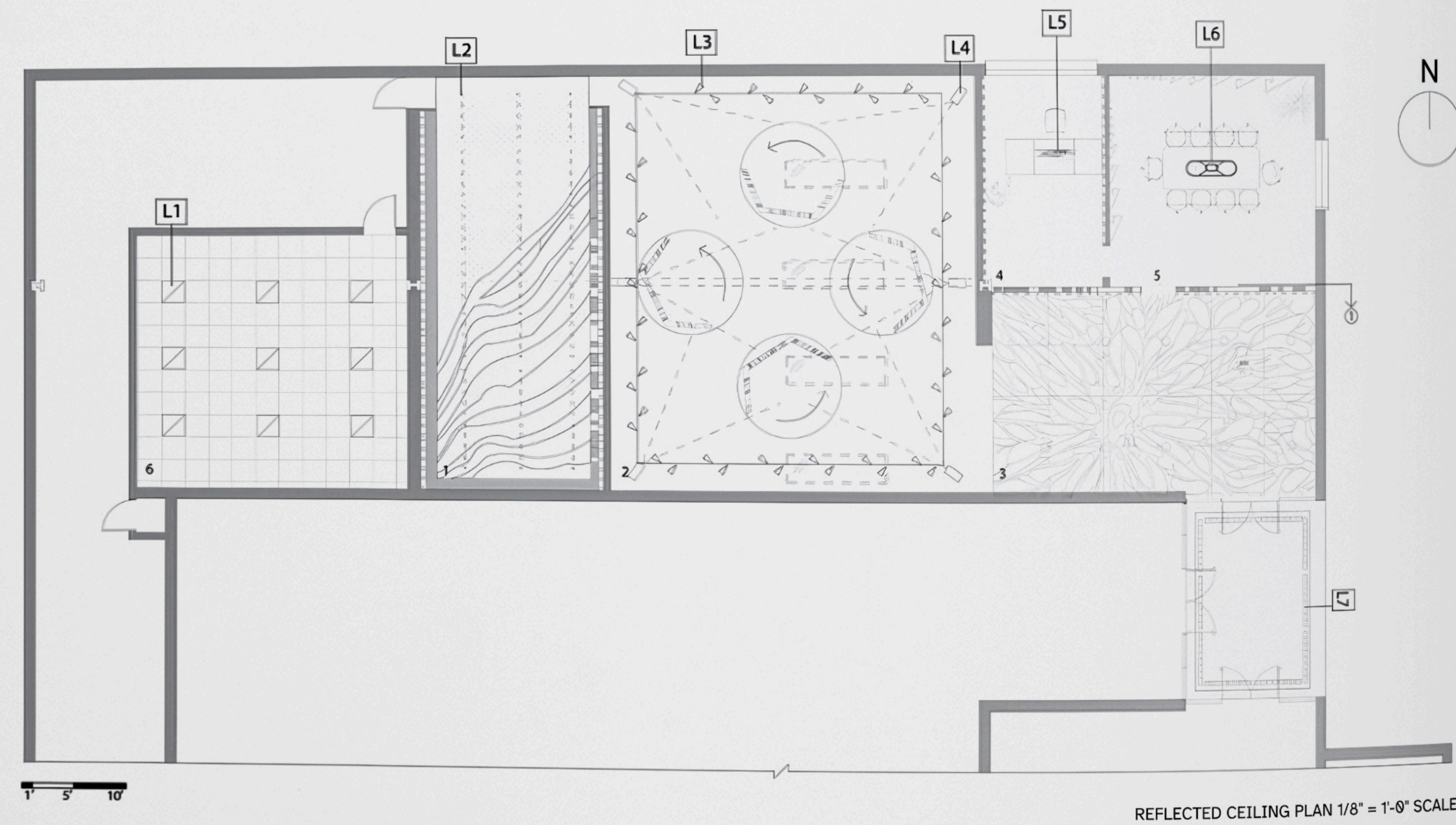
This lighting design project aims to create an immersive experience that blurs the boundary between natural and artificial illumination. Inspired by organic light diffusion, the installation invites users to interact with shifting shadows and reflections, enhancing spatial perception. Using energy-efficient technologies, the design meets modern sustainability standards while fostering a connection between visitors and light as a dynamic, evolving element.



RENDER OF THE LOBBY

This design creates an immersive interplay of light and shadow, enhancing spatial perception and engagement. It taught me how materiality and controlled lighting shape experiences, inspiring future explorations of responsive, adaptive illumination.

This lighting design prioritizes energy efficiency and sustainability, ensuring all fixtures comply with Title 24 energy code requirements. The selected luminaires, including LED panel troffers, programmable LED strips, and dim-to-warm panel systems, were chosen for their low power consumption, high efficacy, and long lifespan, reducing overall energy usage while maintaining high-quality illumination. The integration of color-tunable LEDs also minimizes unnecessary energy expenditure by adapting light output based on need and ambiance.



The use of biophilic lighting creates a harmonious and healthier environment that connects people with the natural world and promotes well-being. The strategies included dynamic control of the light intensity, color temperature, and distribution to imitate natural daylight conditions and designing lighting schemes that highlight patterns, textures, and shapes found in nature.

## FIXTURES SCHEDULE

TAG	MANUFACTURER + FIXTURE NAME	CATALOG NUMBER / DESCRIPTION	LAMP (WATTS, CRI, K)	MOUNTING TYPE (RECESSED, SURFACE, PENDANT, ETC.) + GENERIC LOCATION (FLOOR, CEILING, WALL)	LOCATION
L1	2X2 LED FLAT PANEL TROFFER LIGHT	BEES LIGHTING	3200 LUMENS, 32 WATTS, 4000K, 120/277V	CEILING MOUNT	STORAGE
L2	PURE EDGE/COMPLETE FIXTURE 0.3" CHANNEL	24VDC 5W, TRUCOLOR™ M RGBTW	5W PER FOOT, 94CRI, 2000K-5500K	LED STRIP (GLASS WALL, WALL, CEILING)	RECEPTION GALLERY 1 OFFICES
L3	LIGHTINOVA/ CLIXX SLIM TRIMLESS	LN18INITS BLACK/ MAGNETIC TRACK LIGHT	4.2 W - 19.6 W / 82CRI - 97CRI / 4500K	CEILING TRACK LIGHTING	GALLERY 2
L4	EPSON PROL3000UNL LASER WUXGA	V11H944820	COLOR/ WHITE BRIGHTNESS- LIGHT OUTPUT: 30000 LUMEN2	SURFACE (SITTING ON MOUNTED SHELF)	GALLERY 2
L5	LED CRYSTAL PENDANT LAMP	FLARE BY BOMMA	2700 K, MCOB, 4 W (+5%), 120 mA, 400 lm, 90+CRI	CEILING MOUNT	PRIVATE OFFICE
L6	RACETRACK 48 IN. LED PENDANT LIGHT	PD-53046-35-BK	3500K, CRI 9, 2135 LUMENS, 120-277V	CEILING MOUNT	OFFICE
L7	EOS LIGHT PANEL SYSTEMS DIM-TO-WARM LIGHTPAPER	EOS LIGHT	3000-2500K, 90CRI	CEILING MOUNT	ENTRY

L1



L2



L3



L4



L5



L6



L7

