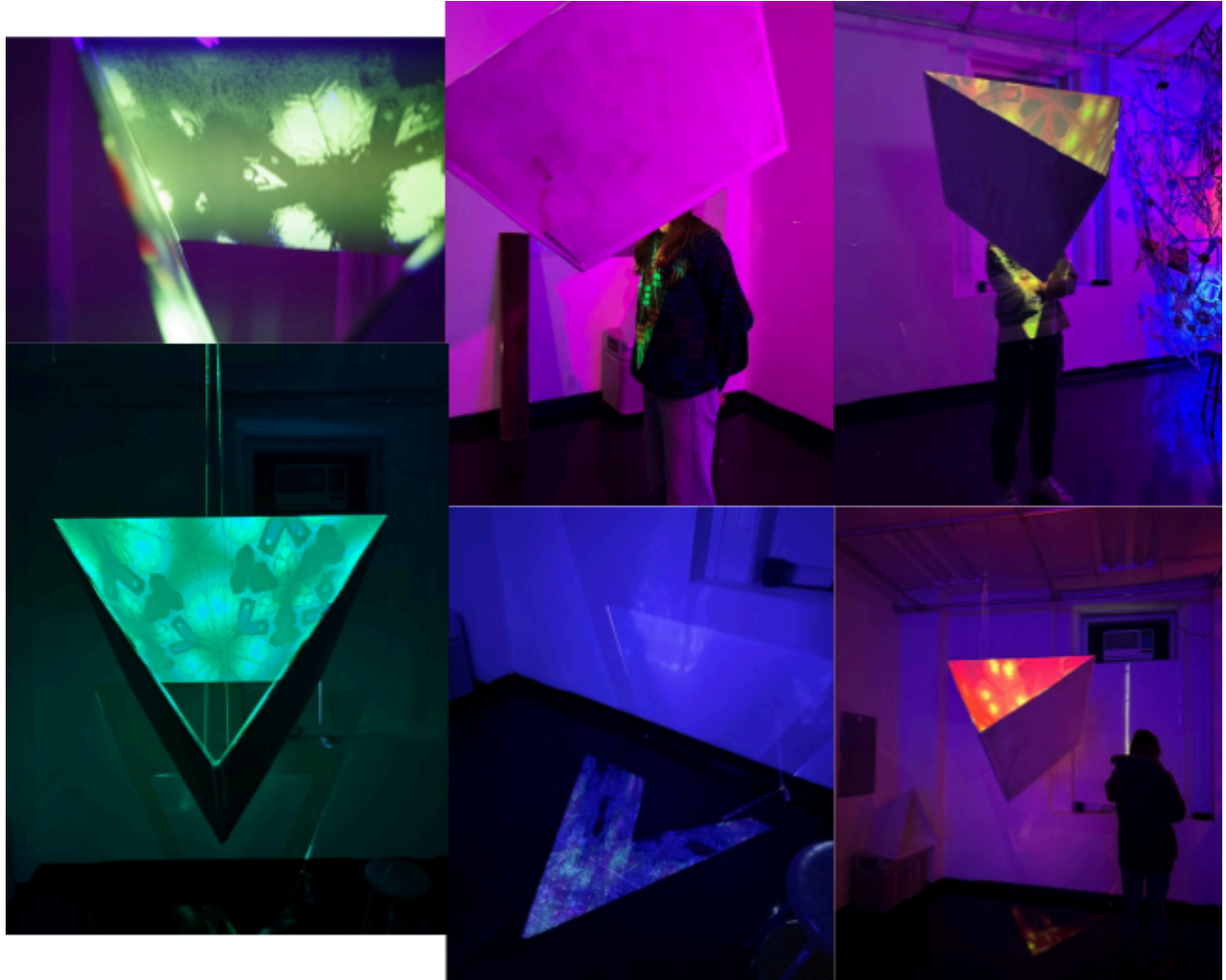


Kaleidoscope
Arthur McLeod and Z Rich

Kaleidoscope's aim was to create a large-scale version of its namesake that would allow audience members to immerse themselves in it. Suspended with invisible lines, the Kaleidoscope looks like a floating portal to another world.



Materials used in ver 2.0:

Prism/Portal:

- Cardboard
- Gesso
- Acrylic latex caulk
- White duct tape
- Eye screws (1 1/8)

Suspension:

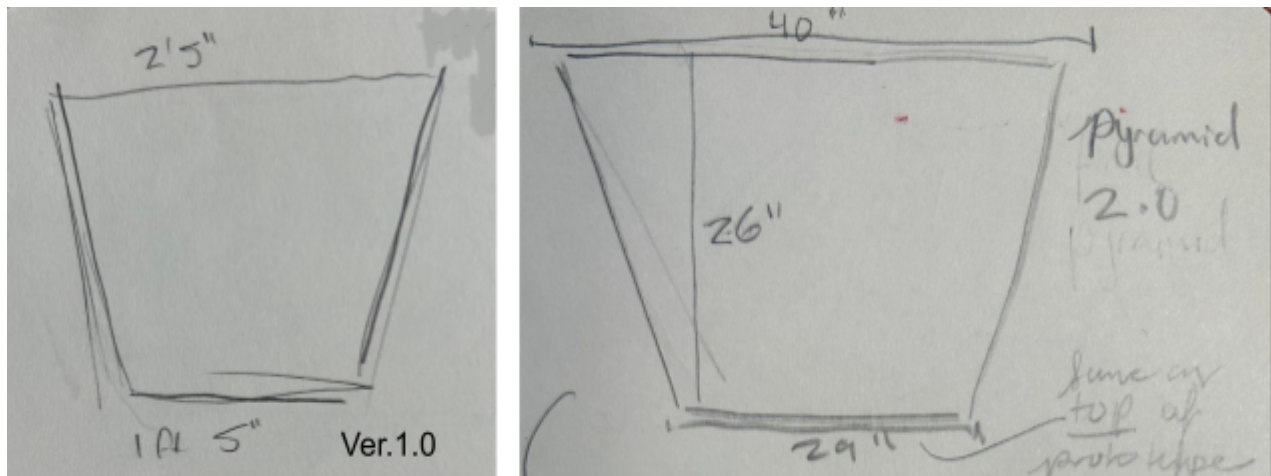
- 3 Threaded U hooks and bolts
- 40lb fishing line
- 3 eye-ended Turnbuckles (4 3/8 x 6 1/4)

Tech equipment (rented from UOttawa Photo Media Office):

- 2 Aaxa technologies P6x Pico projectors
- Alienware Laptop
- HDMI to HDMI cables and connectors
- Rail Projector mount

Instructions:

We built a three-sided pyramid consisting of trapezoidal panels out of cardboard to create a light-weight, tapered pyramid with an opening at the top and bottom. The larger opening was oriented facing the ceiling so the projectors could offer better coverage. We sealed one side of each panel in several thinned layers of gesso to create an evenly primed surface. Once fully cured, we put one layer of gesso on the opposite sides of each panel, and added weight to them as they dried to reverse the warping created by the gesso. We then taped the sides together, adding acrylic latex caulk to close the gaps along the edges.



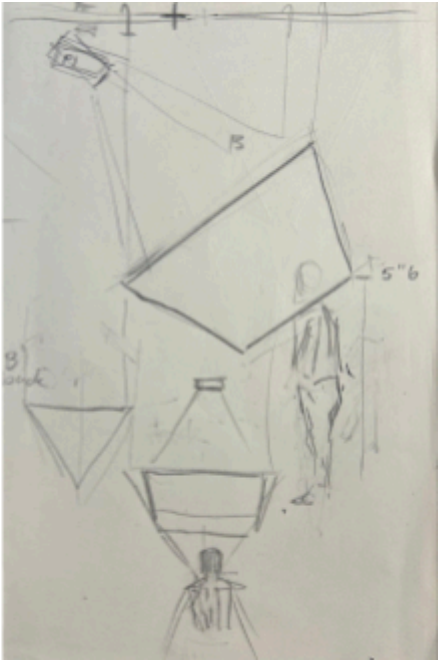
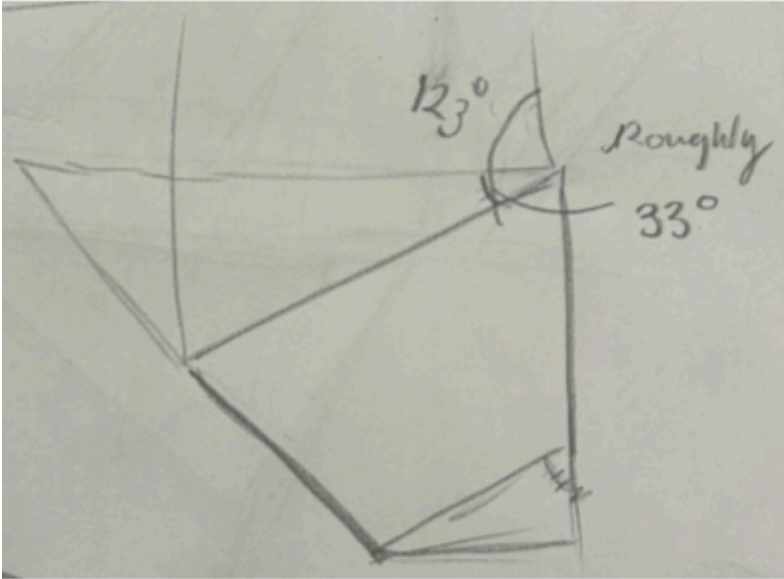
(fig 1. prototype and version 2 panel scale)

To create the suspension system, we fastened two 1 1/8" screw eyes to the "back panel" of the prism, and two screw eyes of the same size into the front corner, one on each side. Fishing line was then fed through pilot holes drilled in the base plates of the U hooks, using a "figure eight" motion to keep the line straight, and secured with quadruple knots. Turnbuckles were added to make the lines adjustable up to 3 inches taller or shorter. The other end of the fishing line was then fastened to the screw eyes on the prism. We then bolted the hooks to the grid system in room 219, safely securing the prism.



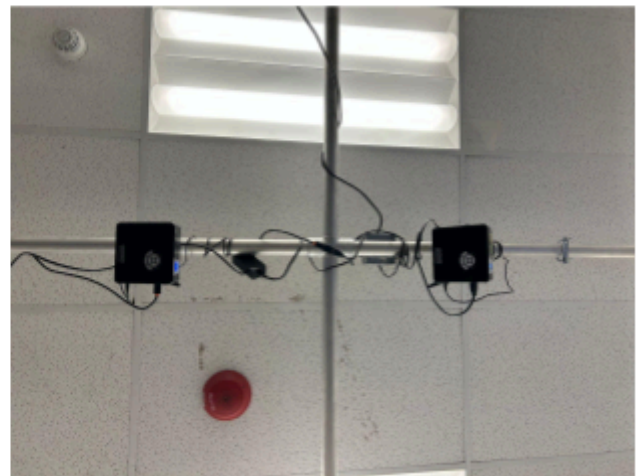
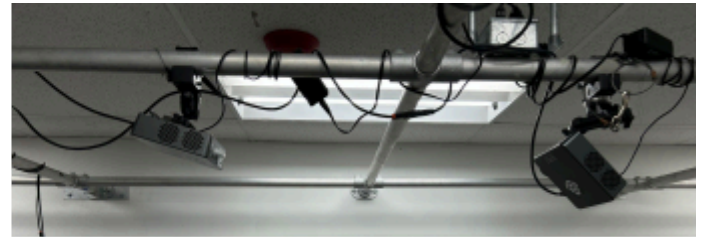
(fig.2 Suspension diagrams, projector set ups, and model 2.0 set up)

The back of the prism was set to hang 5 feet and 6 inches from the floor. The calibrated degree for the installation to hang is approximately 123 degrees on the back two wires. Having it at an angle allowed us to use 2 projectors to cover all three panels by overlapping the projections.



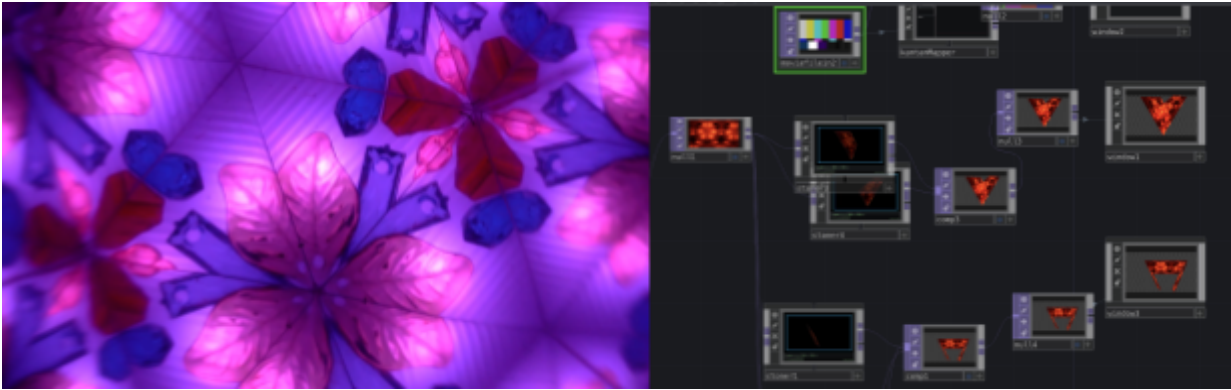
(fig.3 approximate angle of the Kaleidoscope, diagram of person in Kaleidoscope)

We mounted two projectors on the same rail in 219, using the attached outlet to plug them in, and wrapping the HDMI cables around the poles to keep them neat, as well as avoiding a safety hazard. One projector was facing downward onto the front corner of the suspended prism, the other was mounted further back, projecting onto the “back wall” of the prism.



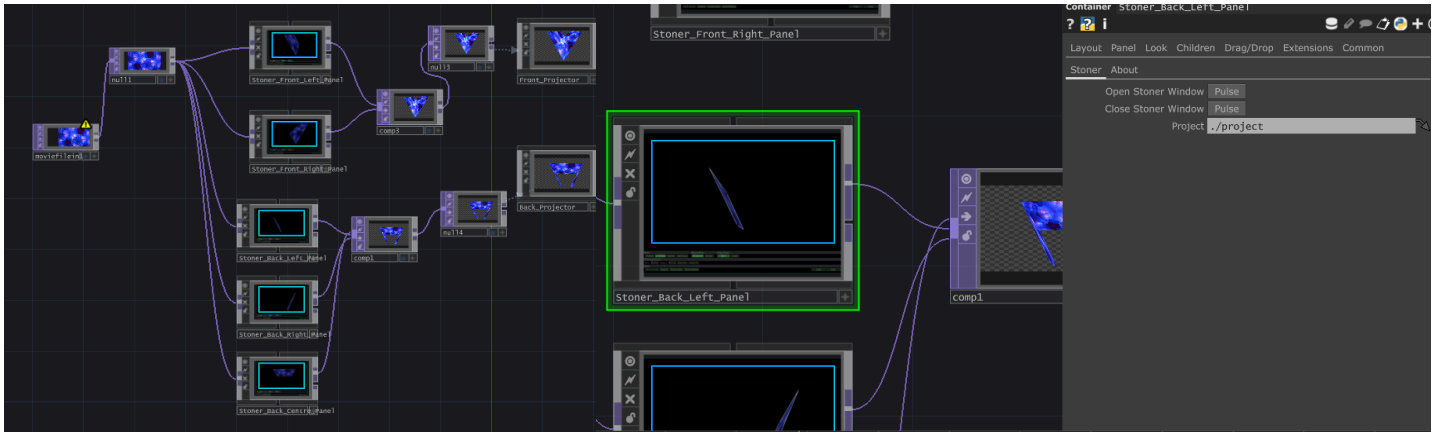
(figure 5. Zoomed out view of kaleidoscope set up, rail systems in 219)

Footage of a normal-sized kaleidoscope was taken with a DSLR using a macro lens for optimal quality. Colour-shifting LEDs were shone into it to create an analogue colour change effect. The video had to be cropped in post, but remained largely unchanged in content. We used TouchDesigner (specifically Stoner) to do the projection mapping, to keep the visuals contained in the prism.



(fig.6 screenshots of final cropped video and TouchDesigner file)

To calibrate the projection for each prism panel we selected the corresponding Stoner, selected the pulse option for the open Stoner window, selected keystone from the window, and then aligned the dotted corners to the panels as necessary.



(fig. 7 Screenshots of TouchDesigner network and Stoner container)