

JOYCE CHEN

(647) 501-6661
joyce.chen1@uwaterloo.ca
/in/joycechen9
joycechen9.github.io

SKILLS

3D: SOLIDWORKS, Creo, Blender, AutoCAD, 3D Printing (Ultimaker, Creality, Formlabs), CNC DATRON Neo
2D: Figma, Adobe Creative Suite, Procreate, Invision, Clip Studio, User Scenarios, Brand Identity
Programming: C, C++, MATLAB, HTML, CSS, Sass, Bootstrap, Git

EXPERIENCE

Product Design Engineering

May - Aug 2023

Viryl Technologies

- Designed and improved parts for modern automatic vinyl record pressing machines using SOLIDWORKS
- Conducted failure and root cause analysis for a keyed shaft: performed cyclic loading fatigue life calculations and proposed tolerance, material, and dimension changes to help the shaft reach infinite life
- Led the design for a creative and practical packaging solution to ship sensitive metal components to clients, collaborated with suppliers, tested samples, and analyzed costs
- Worked with compression moulding, designed parts and drawings for machining, and operated a CNC mill

Mechanical Product Designer

May - Aug 2022

SnapPea Design

- Conceptualized, sketched, and modelled how IoT consumer electronics look, feel, and behave
- Designed with Creo surfacing and master modelling for injection moulded parts and products such as a wearable device and a locking enclosure, using 3D printers to rapidly prototype and test ideas
- Performed engineering verification for 8 projects in a consulting environment and met with clients to brainstorm or discuss improvements
- Co-developed, fine-tuned, and finalized a patent pending design for a plastic clamping mechanism

Mobile Game Visual Designer

Sept - Dec 2021

Salutation Studio

- Defined the artistic style and led creative illustrations as the main designer by creating conceptual designs, splash art, typography, logos, icons, and advertisements in Figma, Adobe Creative Suite, and Procreate

UX Analyst and Web Designer

Jan - Apr 2021

Ontario Institute for Cancer Research

- Co-lead the design for a new website with user scenarios, site maps, theming guides, and wireframes
- Performed usability testing and implemented new design assets with CSS and Sass

PROJECTS

Redbull Flugtag 1st Place National Winner

2022

- Led the complete mechanical and artistic design of the “Snap Pea Flying Machine” in a team of 9 from creative direction and sketches to CAD and mechanical build out
- [Won 1st for flight distance, creativity, and showmanship](#), then flew a victory lap in a Redbull stunt plane

PROMPTO

2022

- Built an [intelligent web application](#) that generates prompts based on user input in a team of 4 to help cure creative block for artists
- Created visuals for the website with Adobe Creative Suite and Figma

EDUCATION

University of Waterloo

2020 - 2025

Candidate for BAsC Honours Mechatronics Engineering

Rhode Island School of Design

2019

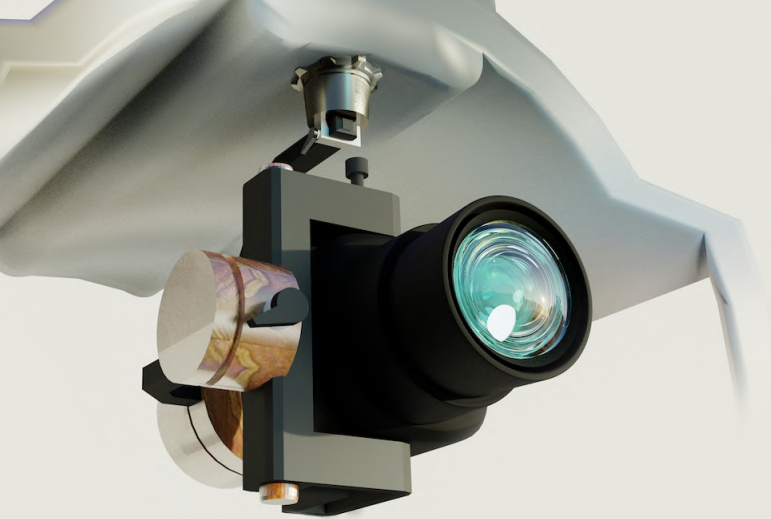
Illustration Major, Pre-college Program

Creative Engineering Design

PORTFOLIO

Joyce Chen '23



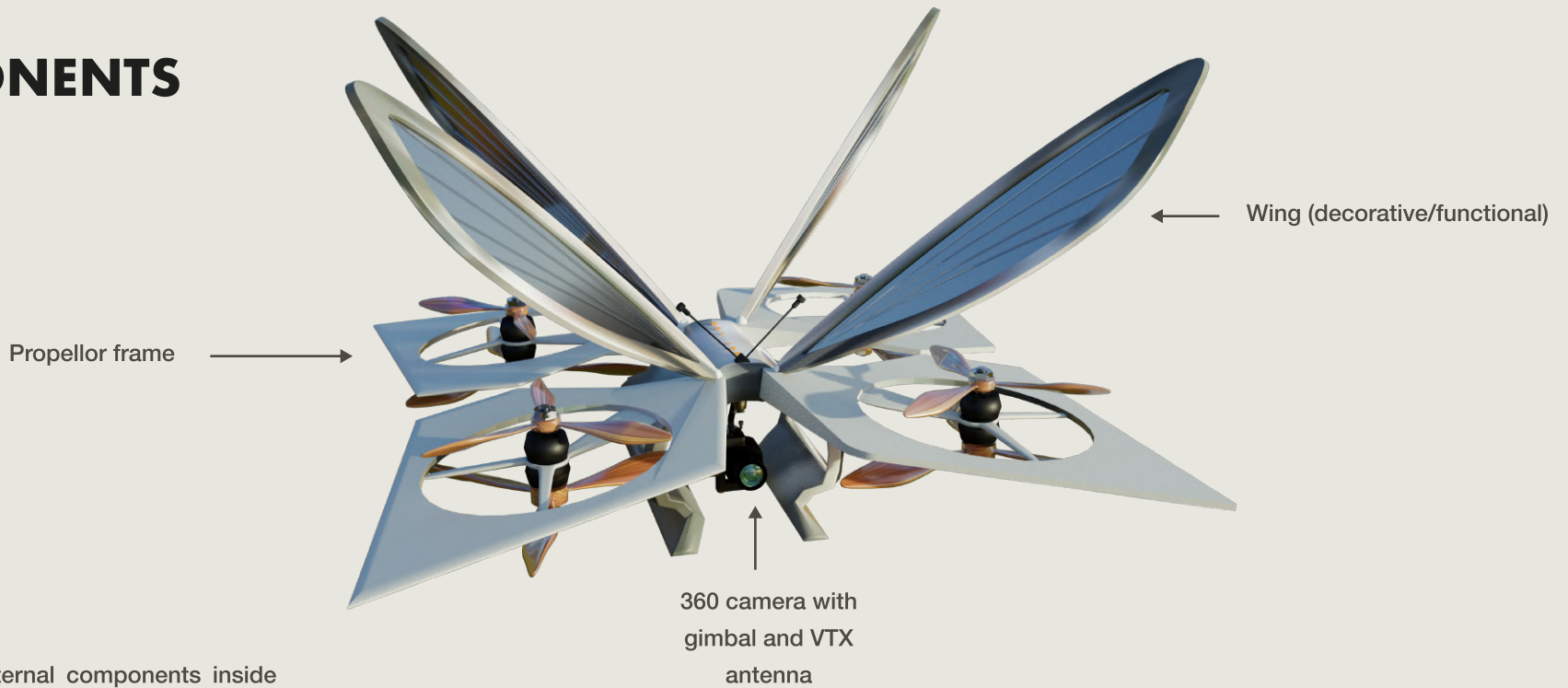


INSECT DRONE

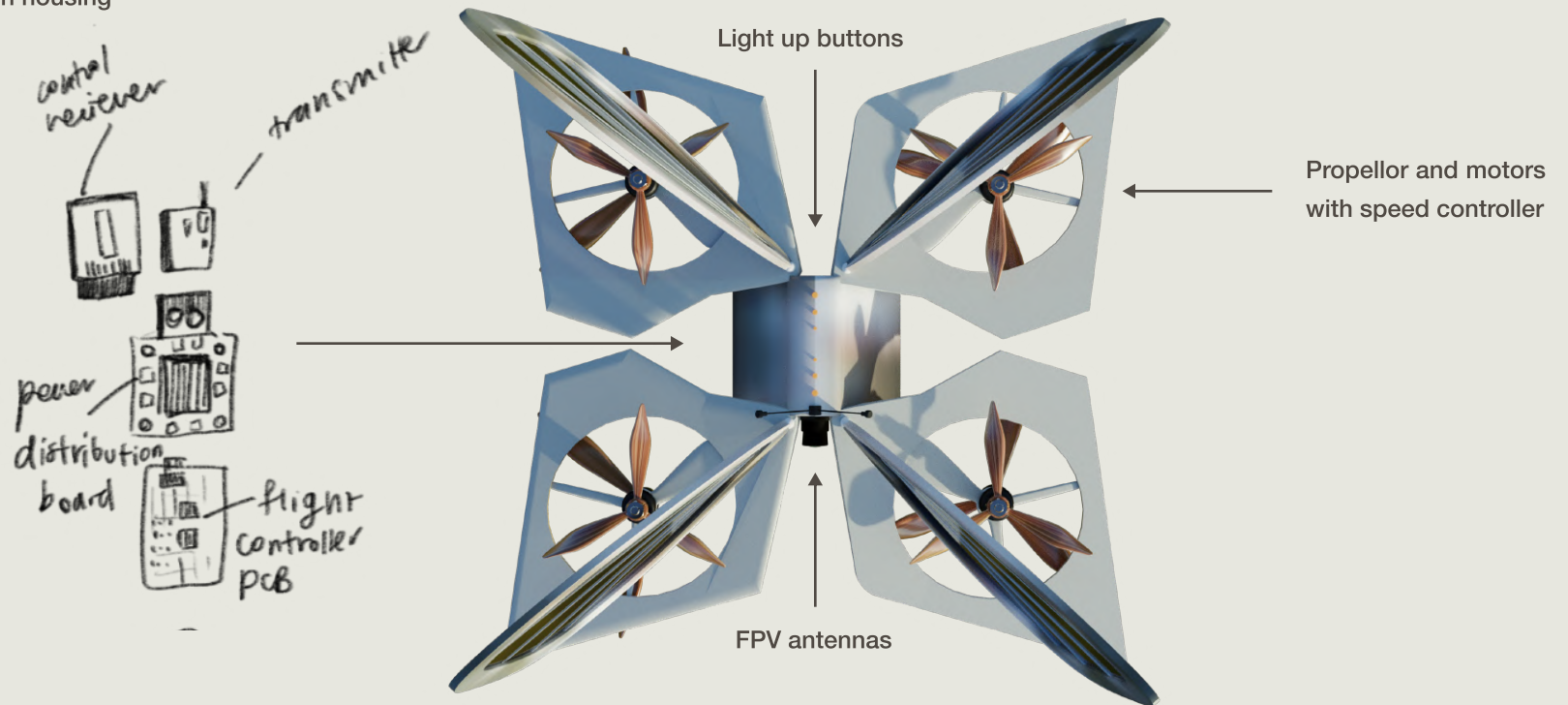
Lady bug inspired drone designed, built, and rendered in Blender. Features include a 360 degree camera with a VTX antenna on a gimbal, four sets of double propellers each with stepper motors, and FPV antennas mounted perpendicular.



COMPONENTS

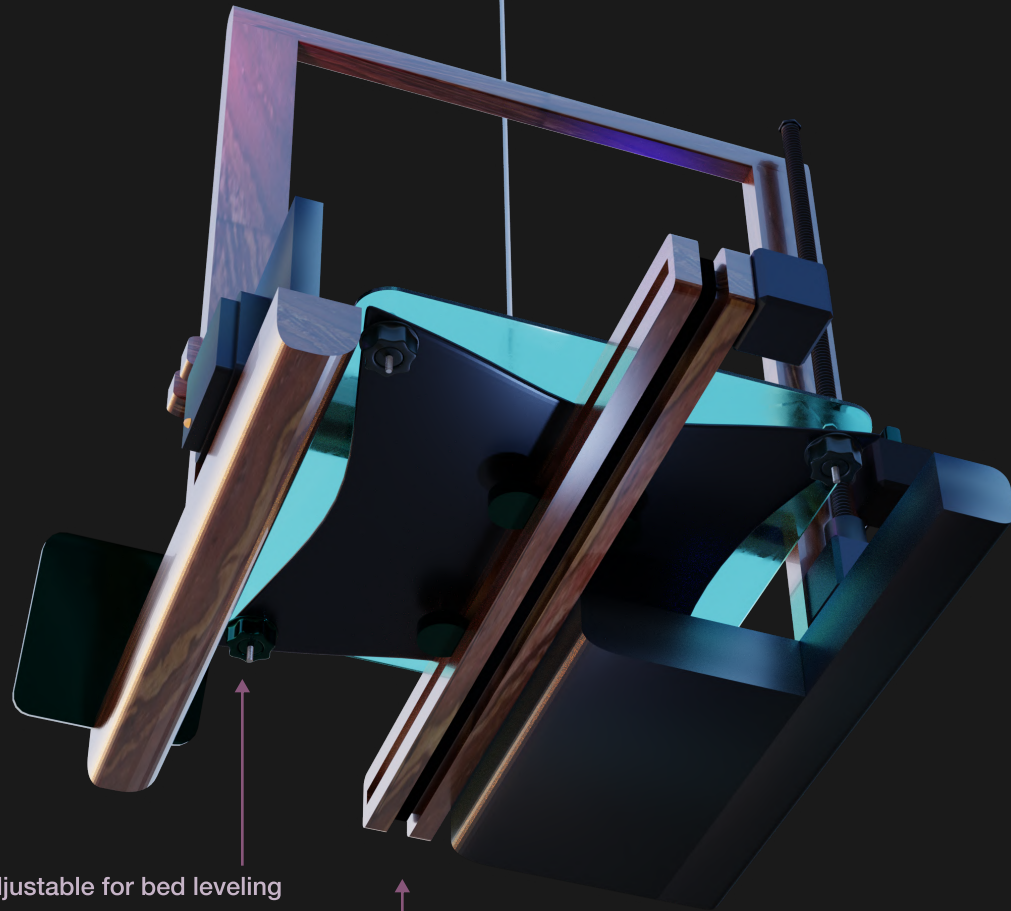


Some internal components inside the main housing



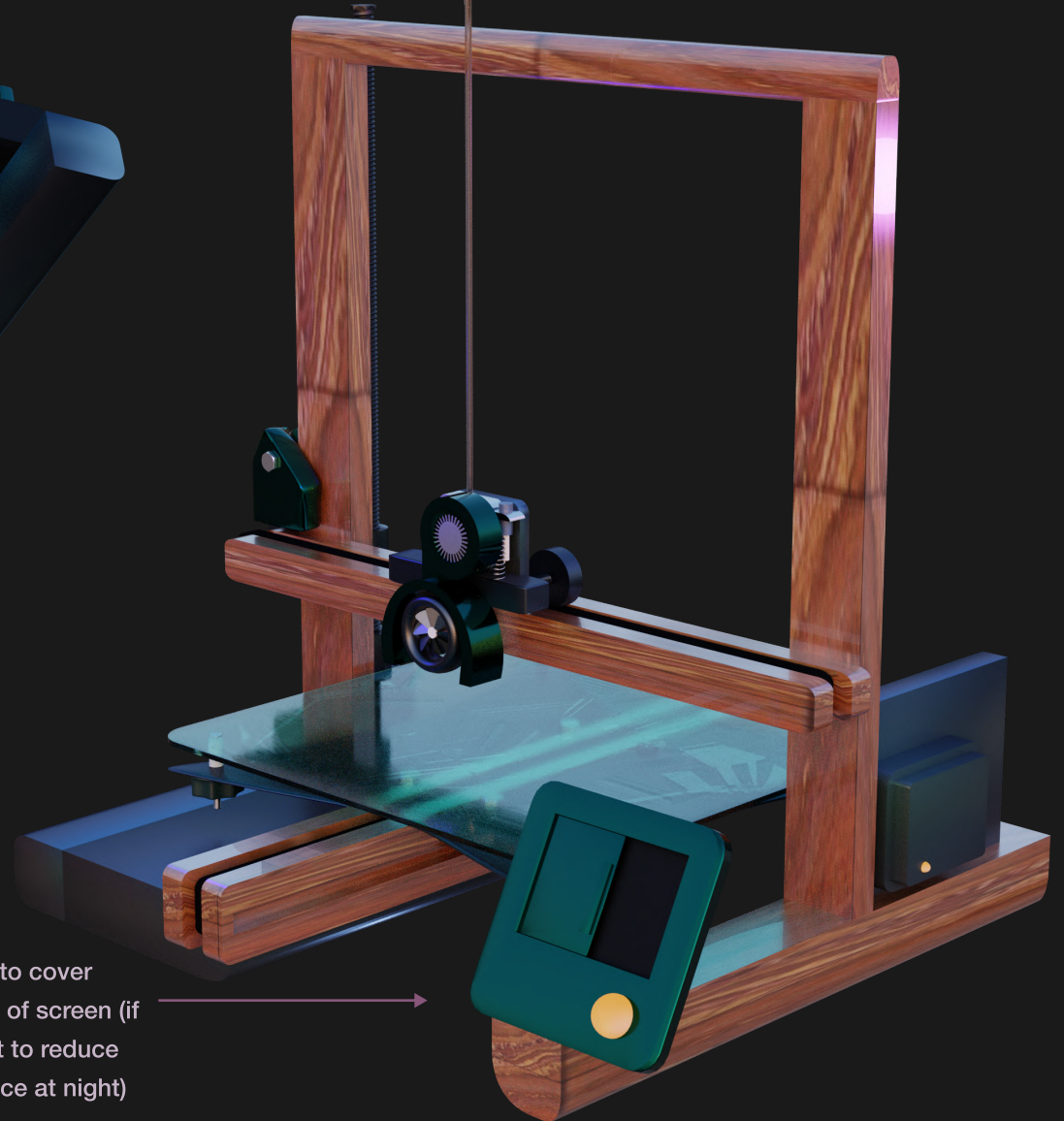
ENDER 3 MODIFIED

By modelling and rendering an Ender 3 Creality printer, many mechanisms were studied in detail and I put my own fun twist on ways this printer could look like.

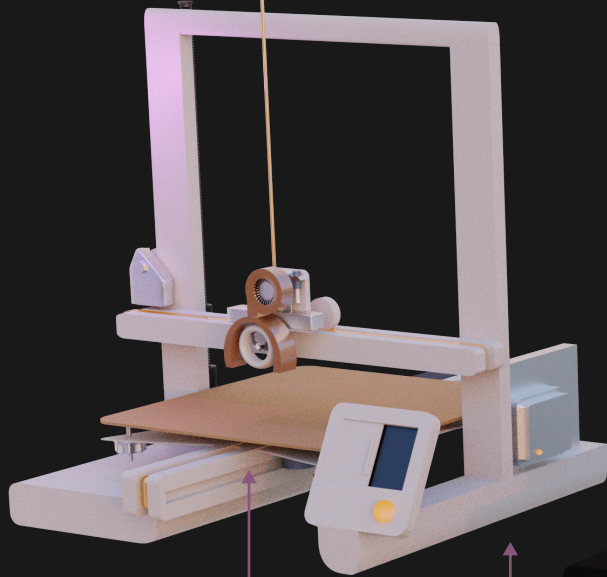


Adjustable for bed leveling

Runs along a pulley track with a
stepper motor



Slider to cover
brightness of screen (if
you want to reduce
disturbance at night)

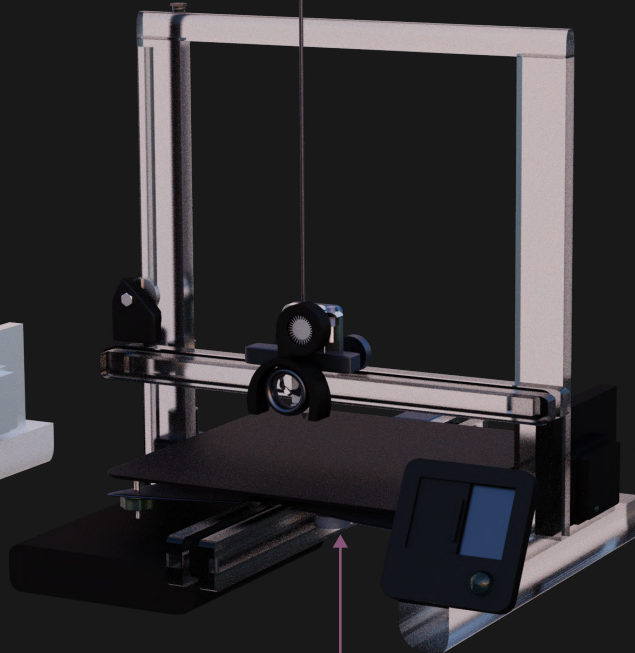


PEI spring steel sheet

White aluminum

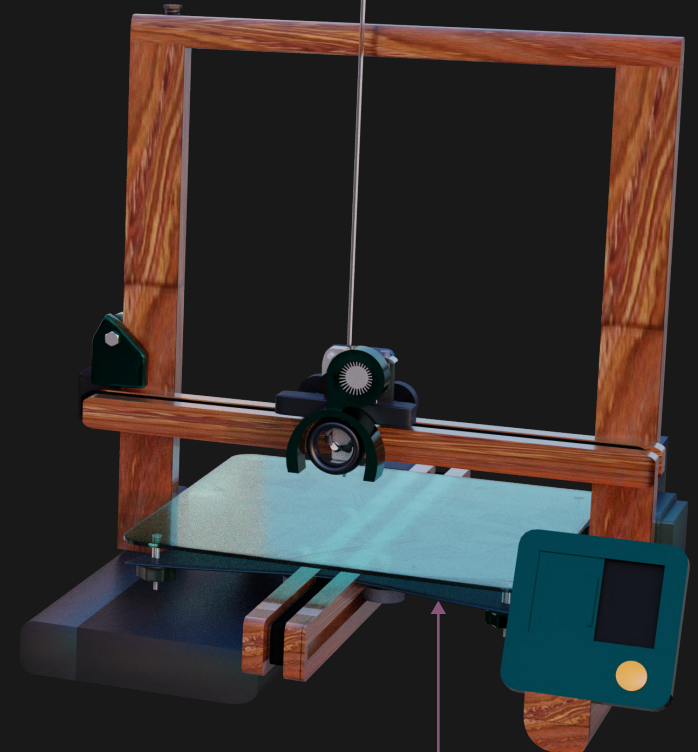
Adjustable clamp for filament

Centrifugal fan housing to direct air to bed on both sides



Flexible magnetic sheet

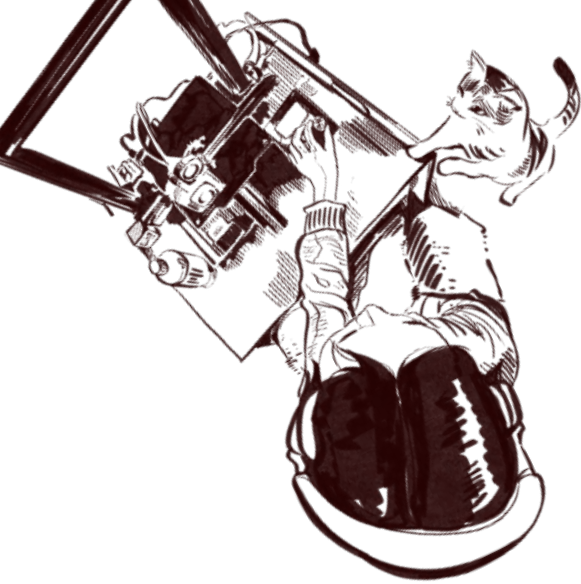
Translucent glossy polycarbonate



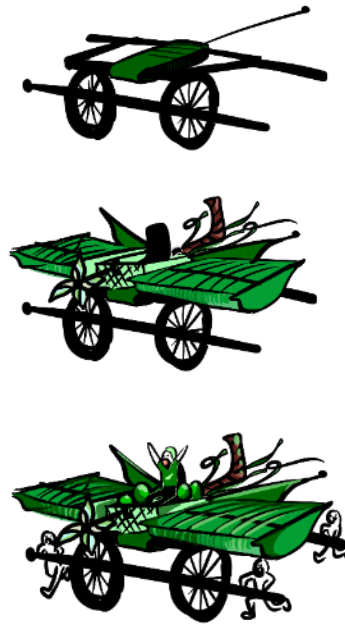
Tempered glass with carborundum coating

Marbled wood

3 MATERIAL EXPLORATIONS



REDBULL FLUGTAG



Build Out Sketch



Concept Sketch



Flying Machine on Competition Day © Dan Mathieu



Redbull Flugtag Team with 1st Place Trophy

FINE ARTS



IT IS SO CUTE | Acrylic and tape on canvas
48 x 72 inches



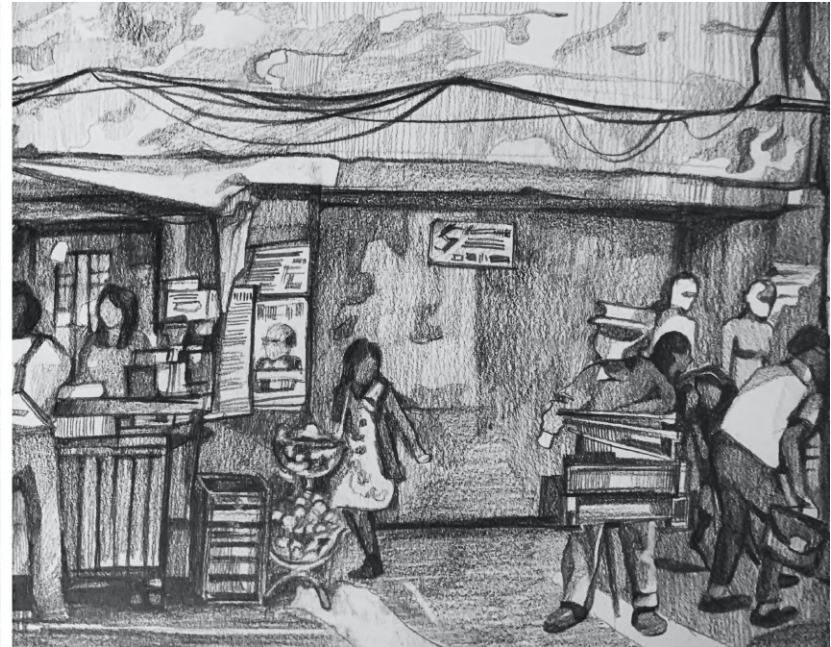
[see more!](#) (takes a minute to load)



Cardboard Party | Acrylic on cardboard 48 x 48 inches



The Ones Who Walk Away from Omelas | Watercolour and ink on paper 24 x 12 inches



Sketchbook Excerpts | Pen and pencil on paper

THANK YOU!