



UNIVERSITY OF CALGARY
SCHOOL OF ARCHITECTURE,
PLANNING AND LANDSCAPE

A large, red, abstract graphic element that resembles a stylized leaf or a calligraphic flourish. It starts with a small dot on the left, curves upwards and around, and ends with a long, thin tail that extends to the right. Several small red dots are scattered along the curve of the graphic.

FOLIO

Christine Liang | MArch Application 2023

DESK ORGANIZER

Project Introduction

The goal of this project was to explore the process of designing products from concept sketches and final drawings to a final prototype utilizing flat materials that mimics MDF, such as cardboard and foam core. A desk organizer was used for this project and the final design needed to be able to be made using 1/2 inch thick flat material. The criteria for a successful final product is to design a desk organizer for a specific user group, design ideation, quality of exploration of design, and craftsmanship of prototypes and final models.

Timeline | 2 Months



Above: An Undergraduate Designer's Toolbox

I decided to design a desk organizer for undergraduate designers so the first step was to gather all materials that are often utilized. This included, but was not limited to the items pictured and should be able to hold more items as students gather more tools as they advance in their degree.

DESIGN IDEATION

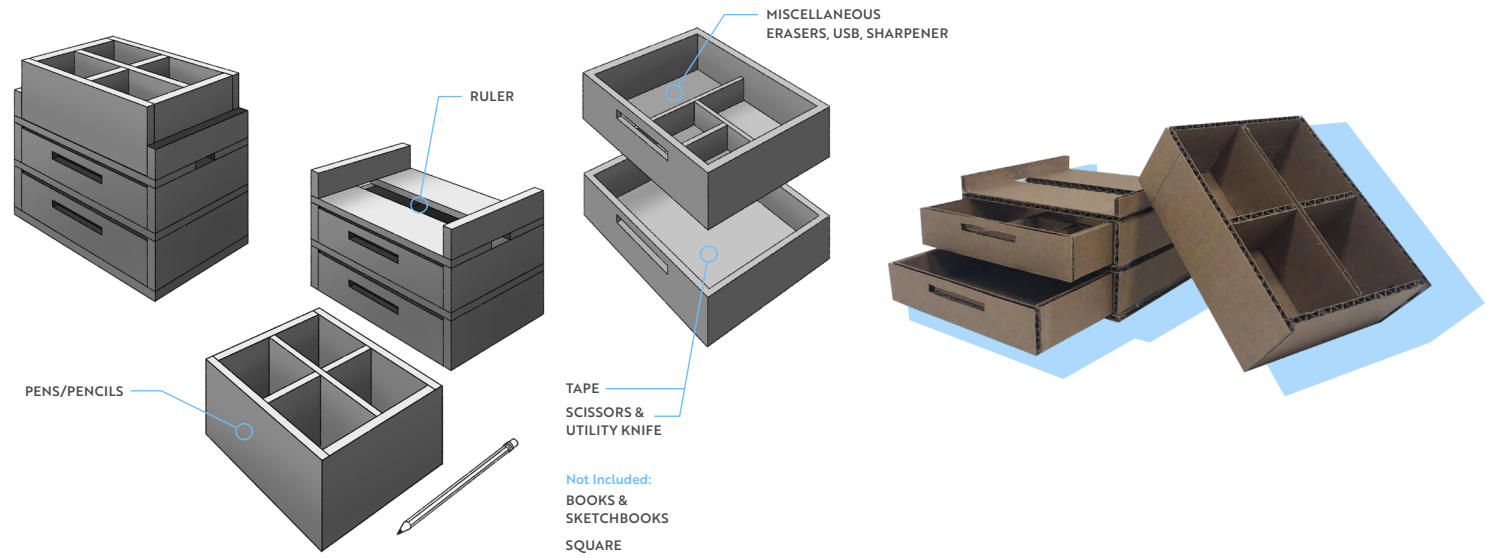
DESK ORGANIZER | 7

Left: Design A Drawings

This design features a removable pencil holder so the designer can have their tools wherever they would prefer instead of reaching to an organizer.

Right: Design A Sketch Model

Constructed with cardboard & hot glue at 1:3 scale

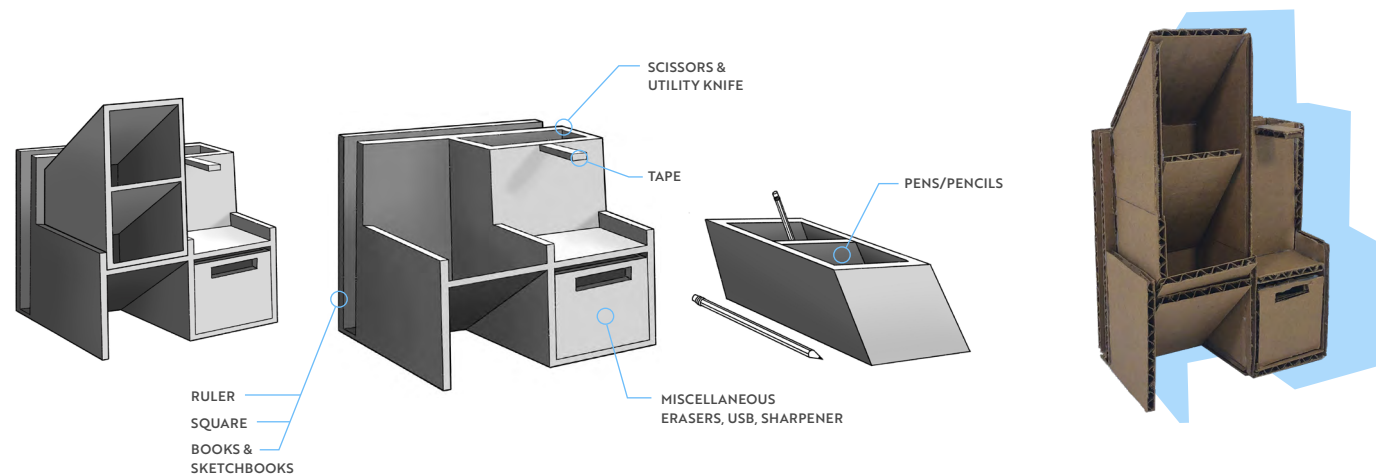


Left: Design B Drawings

This design also features a removable pencil holder, but is a more vertical design than the previous and takes up less desk space. It is also a more unique design in form.

Right: Design B Sketch Model

Constructed with cardboard & hot glue at 1:3 scale



FINAL DESIGN

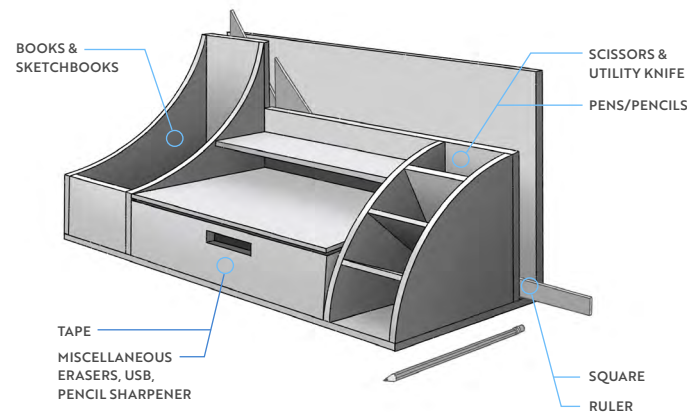
DESK ORGANIZER | 8

Left: Design C Drawing

This design maximizes function. It has maximum storage and is great for an undergraduate design student as their tool box will inevitably expand as they evolve and advance in school.

Right: Design C Sketch Model

Constructed with cardboard & hot glue at full scale



The criteria for the final design is that it had to be design with the understanding that it had to be made of MDF, glued and pinned together. Because of this, the final prototype was made of foam core to mimic the look of MDF. Some changes were made to the final design after the full scale cardboard prototype.

Final Prototype Materials

Made with foam core, white poster board to cover the exposed edges of foamcore and hot glue.



REFLECTION

Due to Covid-19 we were unable to utilize the workshop in the industrial design building and make these desk organizers out of their MDF which was the intended material for this project. However, because of this we were able to develop prototyping skills more than previous years. The prototype model depicted in these images is still being used in my room and holding up extremely well. It showed me how we should not underestimate the importance of the prototyping, and especially prototyping at full scale.

Below: Final desk organizer prototype in situ
Final prototype in use and in the context that it was designed for.



DESK ORGANIZER | 9



Above: Final desk organizer prototype

Above shows the full scale, final prototype in use, organizing all the before mentioned tools (page 3) and more. Made with foam core, white poster board to cover the exposed edges of foam core and hot glue.

SIDE TABLE

Project Introduction

The goal of this project was to explore the process of designing furniture. The project brief was to design a side table that would fit the visual language of a specific company. The project required company research, concept sketches, prototyping and lastly, the creation of a final product. The final product had to be made with woodworking techniques and had to utilize the woodworking and power tools within the workshop in the Industrial Design Building. A successful product should be unique and evoke the chosen company's brand identity, as well as be made with good craftsmanship and consider everything from the construction of the piece to the finishing of the wood.

Timeline | 2 Months

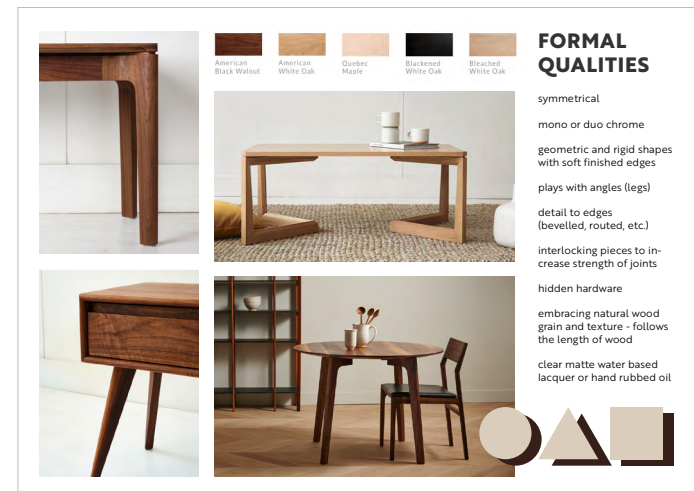


KASTELLA

Kastella is a furniture company in Quebec that targets a middle to high class audience. Their pieces are fully made of wood and have timeless yet unique design. They utilize simple shapes and forms, but focus a lot on the details of each individual component of each product.

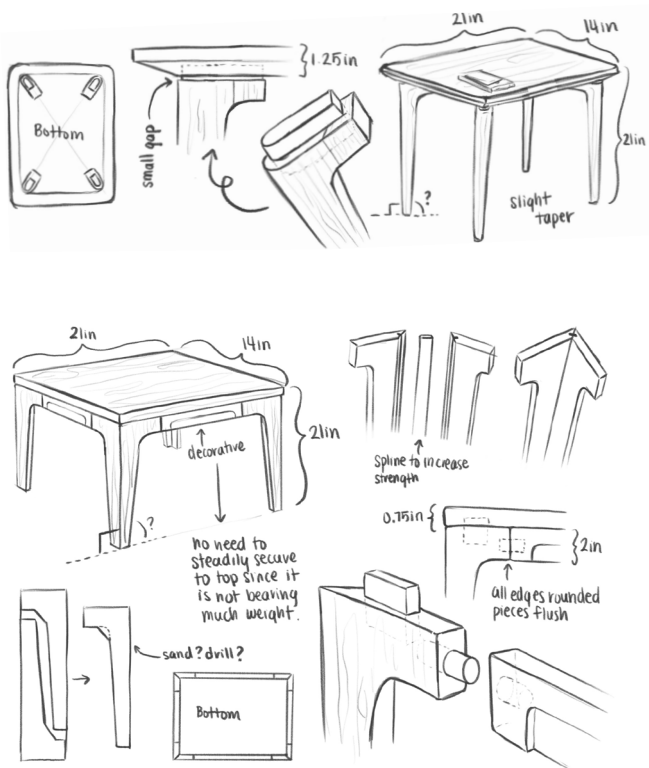
Below: Kastella Formal Qualities Analysis

Image of the analysis of the products that Kastella offers as research in order to design a side table with in their design language.



MOODBOARD & INITIAL IDEATIONS

To start off the project, ideations are done. After analysing the formal qualities of Kastella, a moodboard (below) was made to evoke the company's visual language and serve as inspiration for new designs. The ideations drew upon this moodboard and not only explored the overall form, but the details such as joinery and construction of the piece as well. This is to help with determining the feasibility of the design and ensures a better understanding of the ideation.



Above: 3D Model of Design A



Above: Detail of 3D Model of Design A

This design has angled legs and a unique side profile which is common in Kastella's designs. The overall form is simple but there is a focus on the details and connection points.

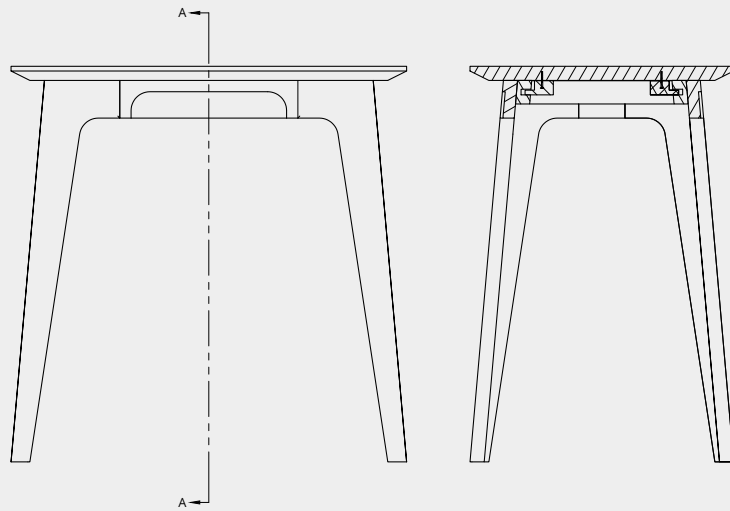


Above: Detail of 3D Model of Design B

This design initially evokes a conventional table, but is actually unconventional in construction with uniquely shaped legs. It also has a decorative piece that can be adapted to be a drawer in future iterations of the design.



Above: 3D Model of Design B



Left and middle: front view & cross section and exploded view of side table

The final table design includes an apron on the inside to anchor the other pieces and improve overall structure of the table. These views are used to visualize the connection of the buttons to the apron, and the top to the base, allowing for expansion or shrinkage of the wood.



Above: 3D model of final table concept
Below: close up shot of 3D model of side table

The final design combines design A and B. The angled legs and unique side profile is common in Kastella's designs and connects back to the company. The construction of the legs is a new idea, but it still connects back to Kastella's design style because it is unconventional. Though the design is very angular, there is softness in the decorative piece and the legs.



REFLECTION

The biggest things I learned is the importance of grain direction. The table top can not simply be glued to the base of the table or else the table would be subject to cracks when the wood inevitably contracts and expands overtime. Additionally, when using woodworking tools, the wood is subject to inevitable mishaps such as blow-out or burning. By considering grain direction, mishaps can be averted and countered.

Tools Used

Mitre saw, band saw, router table, milling machine, drill press

Materials Used

Red oak, wood glue, 1.5in screws, matte polyurethane

SIDE TABLE | 13

Above: Photo of Side Table Detail
Detail made with milling machine.



Below: Photo of Side Table Top
Table top is made up of 2 boards, edge joined together.



MILKY WAY PLAYGROUND

PROJECT INTRODUCTION

the purpose of this project was to explore the design of larger scale structures as opposed to the small scale products up until now. We had to design a playground that had to feature common play equipment around a theme of our choice. In order to do this, we had to prototype the designs through the use of Fusion360 and CAD models. The secondary goal of the project was to explore the use of Fusion 360 for more complex designs. CAD is an important tool for many designers and so this project aimed to develop the skill further.

Timeline | 1.5 Months



Telus World of Science, Edmonton, Alberta

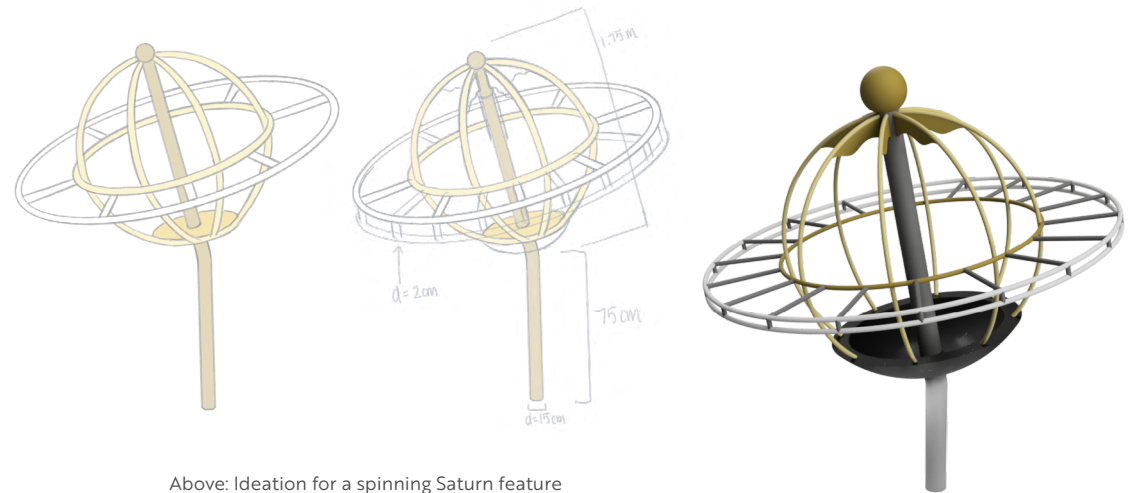
The Telus World of Science does feature indoor play areas, but there are currently no outdoor play areas. So by creating a play area outside, children can take a break from the indoors and have an opportunity to stretch their legs, and their minds outdoors.

Learning through play

When educating children it is important to not forget about the importance of learning through play. The science centre utilizes this idea and encourages children to experience science rather than just read about them. This playground will be another way the science centre can educate, but in an outdoor setting.

PLAYGROUND IDEATION

The goal of this playground is to provide a change of pace to the science centre experience. This playground will feature eight main structures each visually representing the bodies in our solar system and will each be a different feature. They will be arranged in a circular space, with a spherical light attraction in the very middle, this way it resembles the placement of the planets around the sun in the actual solar system. Along with the fun the attractions will provide, there will be information plaques located throughout the playground to provide an element of learning on top of the play component.

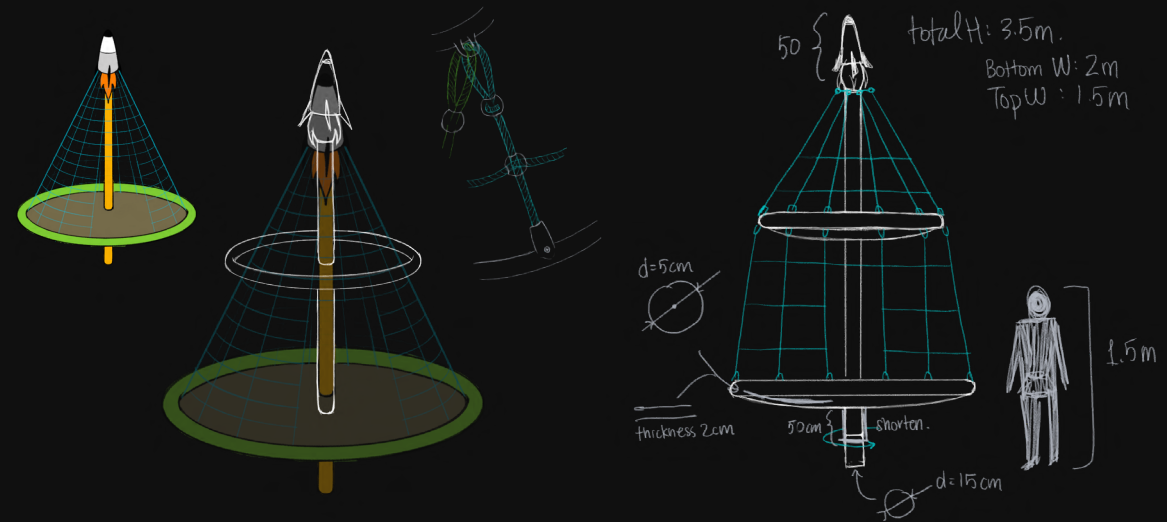


Above: Ideation for a spinning Saturn feature

Initial idea, and refinement to final design on the final spinning feature.

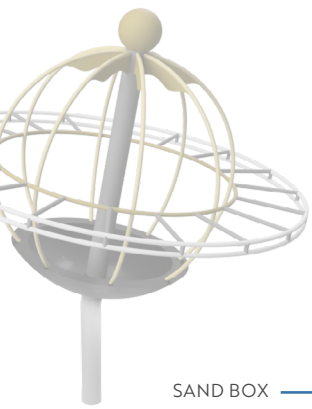
MATERIALS

The ground will use black, purple and blue poured rubber, which will evoke the look of a galaxy, but also ensures the safety of children and is wheelchair accessible. Powder coated steel will be used for posts and other metal components. Rotationally formed plastics will be for any plastic parts such as slides, solid walls and small features. The weight bearing structures (made for standing on) will be made with steel and have non-slip patches to increase grip. There will also be shades which will aid in blocking the sun.



Right: Ideation for spinning carousel feature

Initial idea, and refinement of design for the carousel feature that represents earth.



SATURN
The most obvious part of Saturn are it's rings, but other planets have rings too. This equipment is to inform children about the rings of a planet.

SAND BOX
This feature represents Mars and is meant to teach children about the surfaces of other planets

MONKEY BARS
The two types of monkey bars allow children to race and see who can get to the other side faster. This is to teach children about the time it take to go around the sun and how some are faster than others.

LAMP POSTS
Lamp posts are shaped as shooting stars

SLIDES
Represents Venus in this playground. The main slide is a helix slide which presents the perfect opportunity to teach children about the rotation of the planets and what effects it has on a planet. Venus's rotation is the opposite of the other planets in our solar system.

ROPE BRIDGE
Connects the Rope Dome and the Slides for a extra level of fun for children being able to walk high above the ground.

LIGHT FEATURE
Represents the Sun and is a central light feature where parents can sit and engage with.

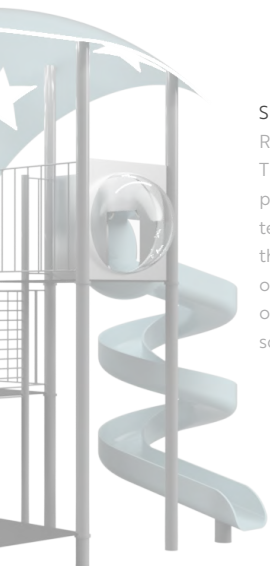
CAROUSEL
Represents Earth, teaches children facts about the Earth and it's place in the Milky Way

SWINGS
Represents Neptune. Other planets such as Jupiter and Neptune, like earth, have storms too. Neptune which is always windy is a great inspiration for the swings.

SPINNERS
Represents Mars as a part of this play ground. Meant to teach children about the axis of rotation of a planet and what effects that can cause.

BENCHES
Benches shaped like asteroids or space rock.

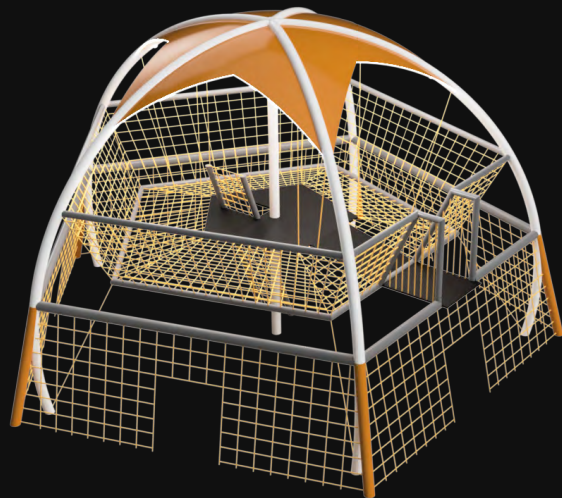
ROPE DOME
This feature represents Jupiter and will teach children about the size and makeup of different planets. Walking on the rope will evoke walking on Jupiter, which is a gaseous planet.



REFLECTION

This project broadened my perspective what Fusion 360 can be used for and was a great exploration of Fusion 360 and it's tools. However a component that Fusion is not capable of is more organic forms, though possible, it is extremely hard to construct organic forms. That is something to keep in mind when choosing which programs to use for a project. Since this project was more of a tool refining exercise, I would want to delve more into safety and restrictions when it comes to city playgrounds on the next projects I work on relating to large scale structures.

Below: Close up of Rope Dome
Shows more details on the overall construction and detail of the model.



DINNERWARE DESIGN

PROJECT INTRODUCTION

The goal of this project was to design dinnerware and flatware to assist with the consumption of food. The context of these designs are meant to be for a formal context, being used in either an diplomatic/embassy dining context, a 3-star Michelin restaurant context for a stately home dining concept. This means the dinnerware and flatware are to be priced for an extremely high-end luxury market and aimed at a very wealthy and aesthetically sophisticated target audience.

A secondary goal of this project is to further develop skills in Fusion360. This project explores decoration and requires you to investigate ways to use Fusion and other 3D modelling software on a small and detailed scale.

Timeline | 4 Months (in conjunction with other projects)



User Group and Design Direction

I chose to design for a stately home context for a wealthy modern day Chinese audience. These individuals love collecting, real or fake antiques that consists of earthenware, metal ware among other forms of art. In order to appeal to this user group, I will be designing porcelain dinnerware and utilizing lots of gilded metals to add make the designs more opulent.

Design Inspiration

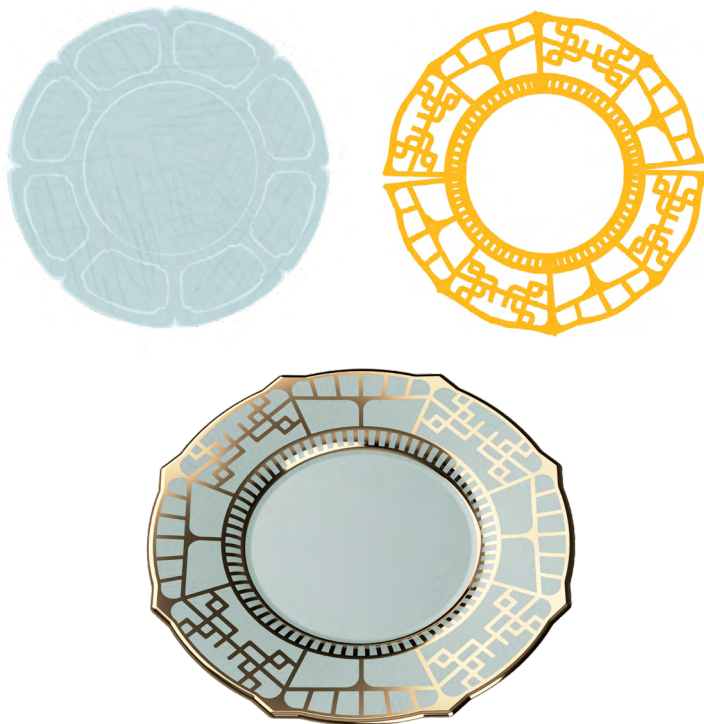
The inspiration for the visuals of the design is the architecture and nature found in traditional Chinese tea gardens. These tea gardens represent the peak of what is thought of as traditional, elegant and opulent in Chinese culture so by utilizing motifs and visuals found in these tea gardens will appeal to my audience.



Tea Garden Architectural Inspiration

The way the Chinese tea garden is evoked in my design is through the juxtaposition of nature and architecture. The overall shape of the plate evokes the petals of a flower and is juxtaposed by the architectural designs that can be found on the pavilions of Chinese tea gardens. This design ends up informing the other pieces

Below Ideation of the final charger plate design featuring flower silhouette and Chinese tea garden architectural motifs.



Additional Components

An important aspect of the Chinese tea garden is nature, especially the lotus plant. The lotus represents purity and grace as it is something beautiful that emerges from the mud it is planted in. This is the reason why I decided to utilize the lotus as the handles to many of the lidded dinnerware pieces.

Below Ideation of the gaiwan (Chinese demitasse and saucer) design as well as lotus handle and construction.



A

Charger Plate

The charger plate is used for setting the table, this plate is the most decorative.

B

Dinner Plate

The dinner plate is actually used for eating so it is less decorative than the charger plate.

C

Rice Bowl

A smaller bowl to hold portions of rice to be eaten with other dishes.

D

Cream Soup Bowl

The cream soup bowl also has a saucer which is decorative on the exposed edges.

E

Covered Serving Bowl

Chinese cuisine is all about sharing so a serving bowl is necessary. There is a hole in the lid to allow for a serving spoon.

F

Gaiwan

Chinese version of a traditional demitasse & saucer used for tea.

G

Tea Pot

An essential component of Chinese dinnerware and is more decorative due to its prominence in Chinese dining.

Materials

Celadon ceramic body with gilded gold leaf on the ceramic body.



Gold Lotus

The gold lotus handles are made of gold plated cast metal. Connected through the use of a screw (see page 18).



Materials
Celadon ceramic body with gilded gold leaf on the ceramic body.

A **Tea Scoop**
Teak wood tea scoop to measure out tea leaves.

B **Chinese Soup Spoon**
Wide ceramic soup spoon used in Chinese culture instead of a metal spoon.

C **Serving Spoon**
Ceramic serving spoon perfect for soup or stew.

D **Pierced Serving Spoon**
Ceramic pierced serving spoon for serving food.

E **Dinner Fork**
Sterling silver dinner fork with a ceramic handle.

F **Dinner Knife**
Sterling silver dinner knife with a ceramic handle.

G **Fish Knife**
Sterling silver fish knife with a ceramic handle.

H **Chopsticks**
Teak wood chopsticks with ceramic counterweights.

REFLECTION

I definitely expanded my knowledge of Fusion 360 through this project. I also learned the importance of spreading out your work in a project timeline. Because there were so many components of this project, including 3D printing testing of final prototypes, I had to change the way I worked and set more strict timelines in order to ensure all the pieces were completed and ready by the due date.

Right: 3D model of dinnerware and flatware all together
See the cohesive visual language and scale of pieces in comparison to each other.



FINE ARTS

Introduction

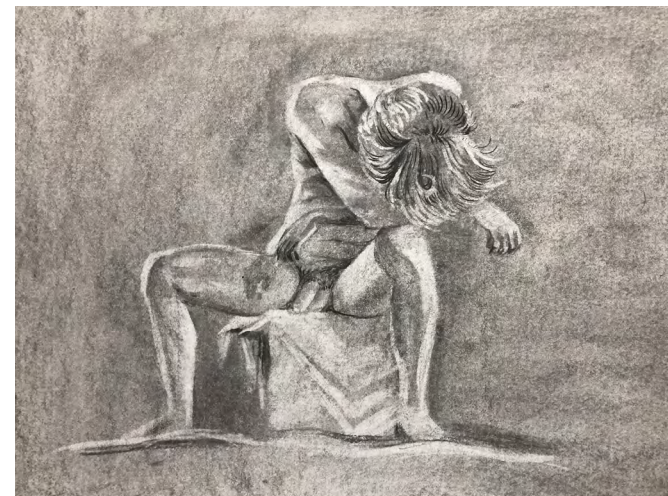
Fine arts has been a part of my life since I was 12 years old. In addition to taking art classes in school, I also participated in weekly extracurricular art classes. One of my favourite mediums to work with is charcoal because of its malleable and workable nature. And in contrast, another medium I like working with is ink because of its permanence and instant drying properties.

Time Frame | 2019-2022



In Class Still Life, Compressed Charcoal, 6 hours
2019, 30"x44"





SUSTAINED TONAL DRAWINGS

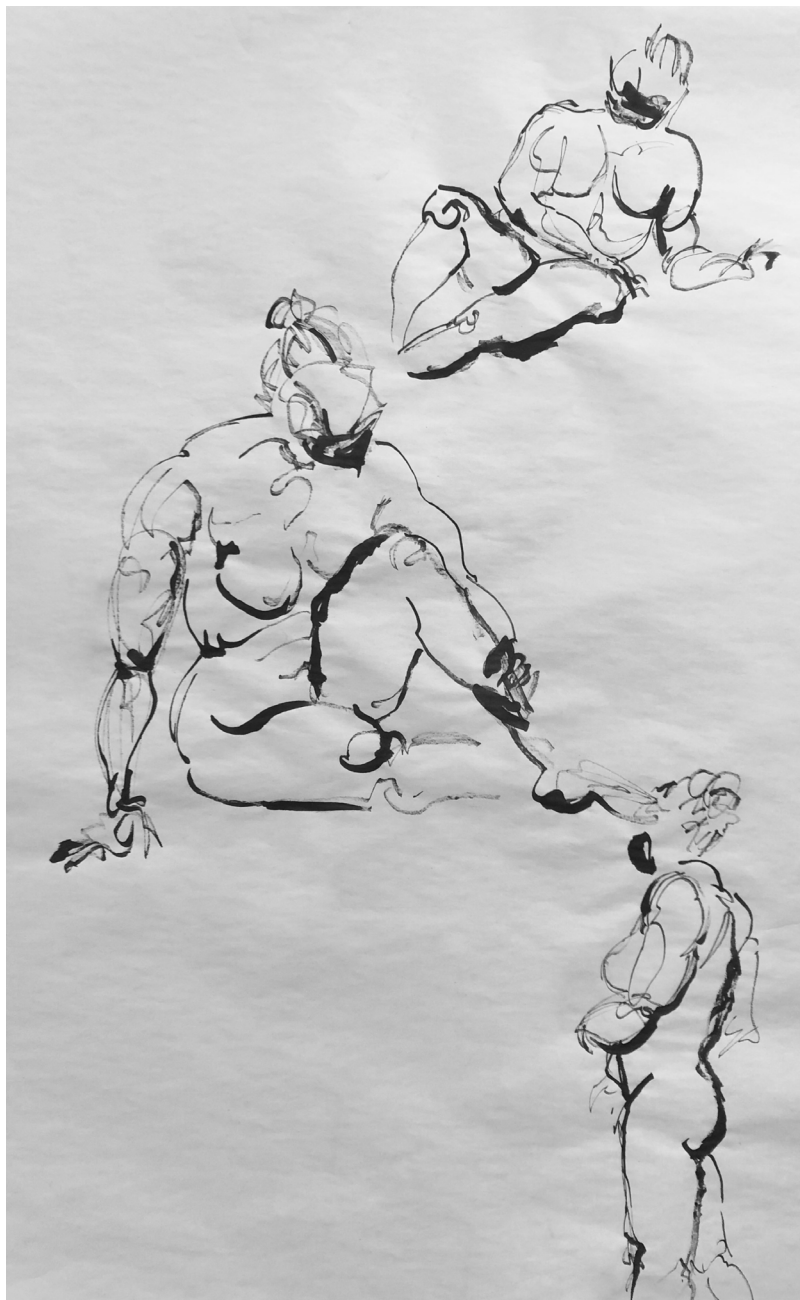
Top Left: Shoes Still Life,
Compressed Charcoal
2021, 24"x36"

Top Right: 3 Hour Model Drawing,
Willow Charcoal
2021, 17"x24"

Bottom Left: 3 hours Pears Still
Life, Compressed Charcoal
2019, 17"x24"

Bottom Right: Da Vinci Fabric
Study, Compressed Charcoal
2022, 22"x30"





GESTURE DRAWINGS

Left: Ink Gesture on Newsprint
45 seconds each. Ink on a popsicle stick, done on newsprint, 24"x36"

Top Right: Compressed Charcoal
Gesture on Newsprint
1 min. Compressed Charcoal with
chamois on newsprint, 24"x 36"

Bottom Right: Compressed
Charcoal Gesture on Newsprint
30 seconds each. Compressed
Charcoal with chamois on
newsprint, 24"x 36"