
CALIDA

ottoman + floor heater



Project Brief

Design a meaningful product, service or app that meets the needs of a telecommuter living in a small space.

Contents

Design Challenges (DC)

- exercise design thinking and explore ideas with different scenarios within the parameters of work in small spaces -

DC 1: Planes, Trains, Spaceships, RVs, Boats and Tiny Houses

DC 2: Speculative Design

DC 3: Take A Stand

DC 4: DIY Challenge

DC 5: Aging Workforce

DC 6: Retaining Human in Design

Final Direction

- research information, finalize details and build the model -

Top 3 Directions

Chosen Direction

Research

Inspiration

Refined Design

Finalizing Details

Final Mockup

Final Model

Persona

Orthographics

Build Process

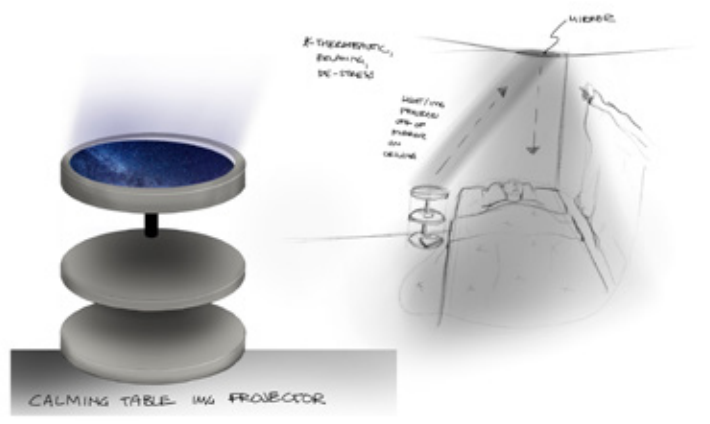
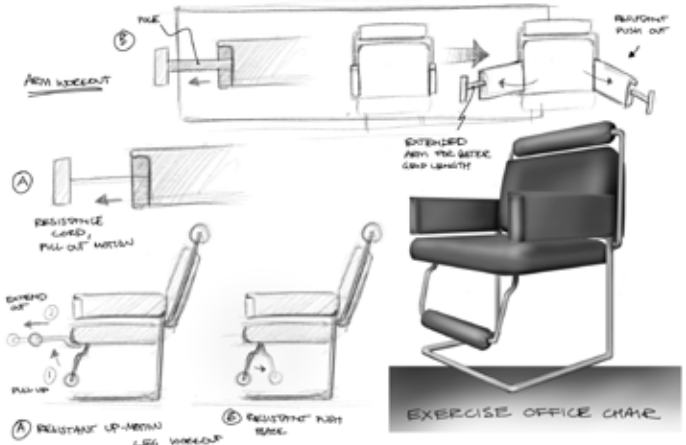
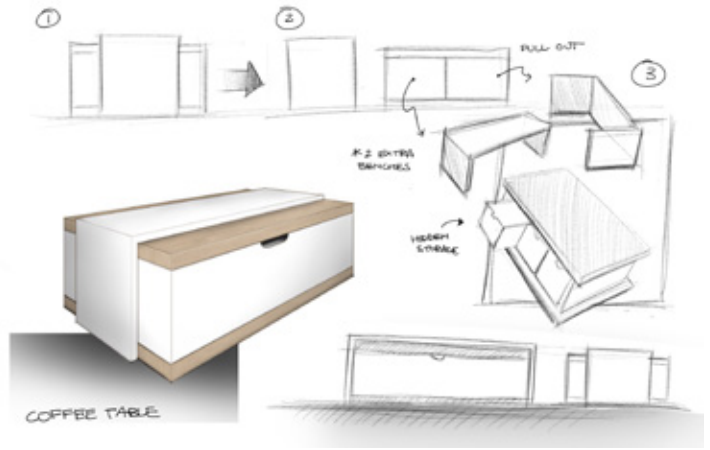
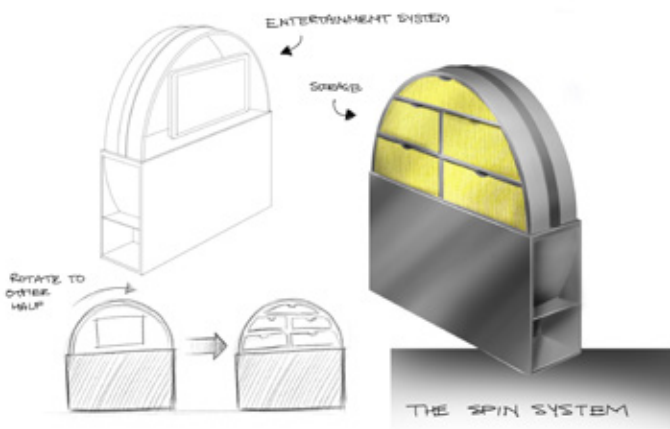
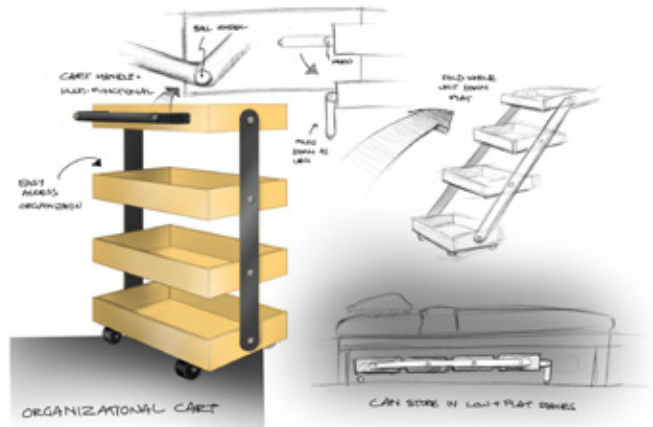
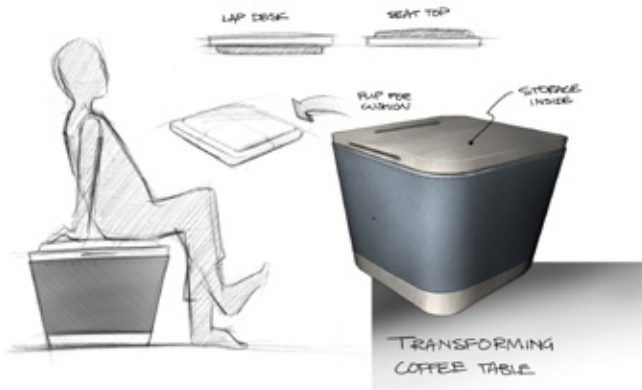
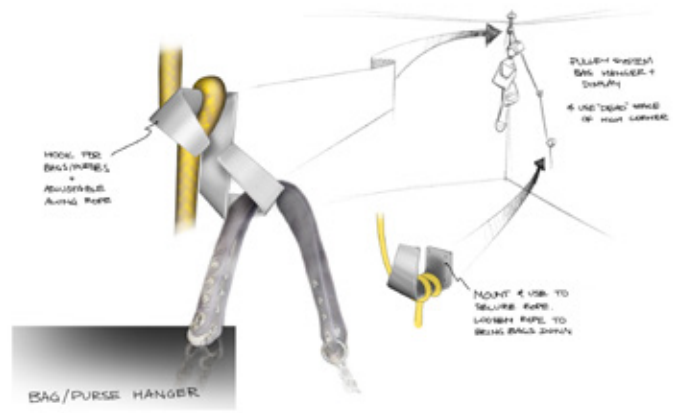
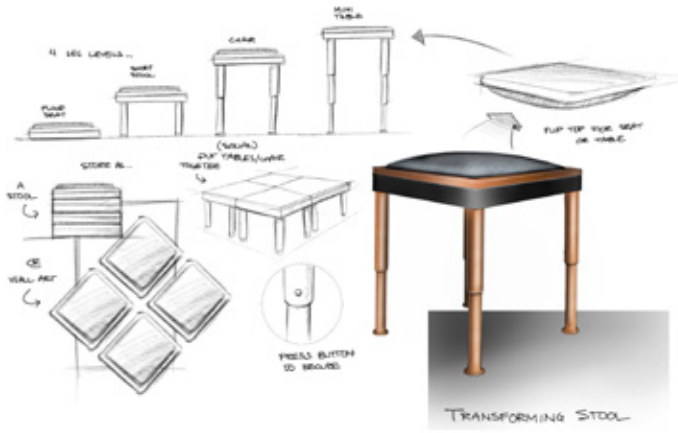
Details

In-Use

DCI

Planes, Trains, Spaceships, RVs, Boats and Tiny Houses

—
design for small spaces to make them more comfortable and efficient



DC2

Speculative Design

—
design for potential futures in both optimistic and pessimistic perspectives;
make unbelievable stories believable

DC3

Take A Stand

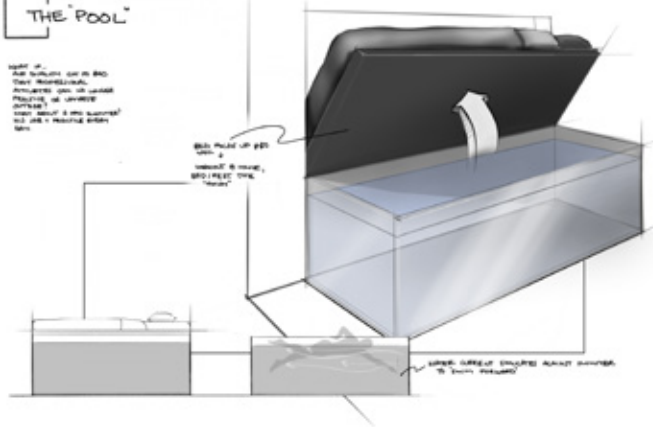
critical design; design to comment on or meet the needs of issues facing
mankind as the trend of working from home in a small space grows

THE POOL

What if the amount of air and light that enters a room is controlled by a central system that can be adjusted to suit the needs of the user?

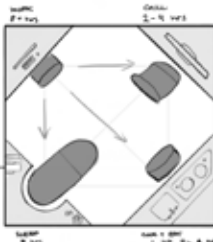
Big pool of air that is controlled by a central system that can be adjusted to suit the needs of the user.

When the air is filtered and purified, it is then distributed to the rooms.



LIFE IN A BOX

What if the amount of air and light that enters a room is controlled by a central system that can be adjusted to suit the needs of the user?

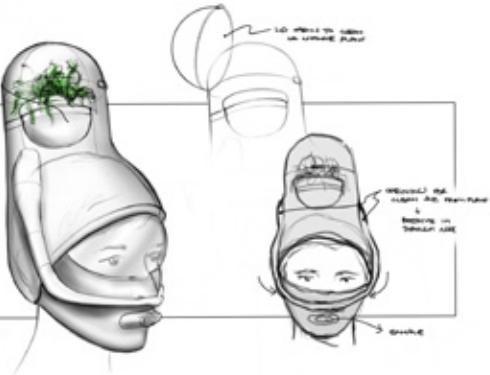


Big pool of air that is controlled by a central system that can be adjusted to suit the needs of the user.



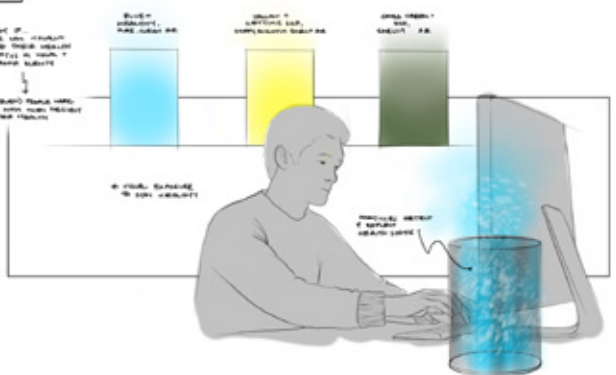
POT HEAD

What if the amount of air and light that enters a room is controlled by a central system that can be adjusted to suit the needs of the user?



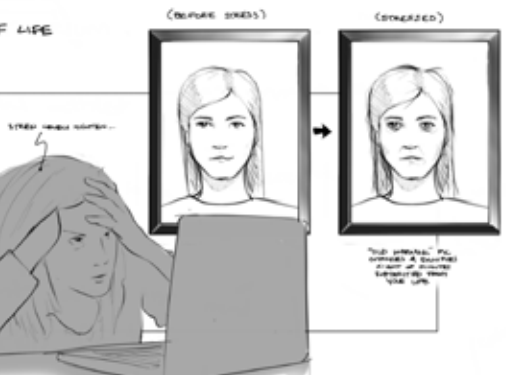
HEALTH TUBE

What if the amount of air and light that enters a room is controlled by a central system that can be adjusted to suit the needs of the user?



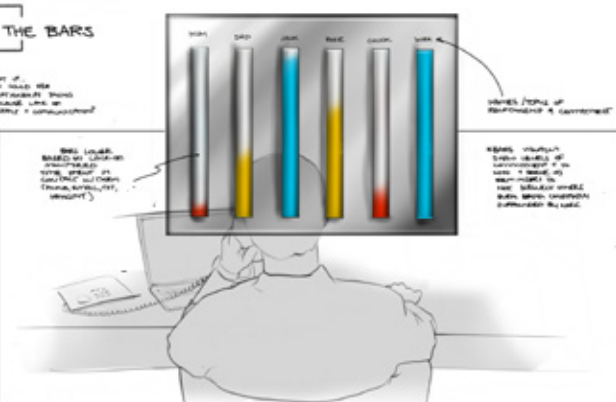
THE FRAME OF LIFE

What if the amount of air and light that enters a room is controlled by a central system that can be adjusted to suit the needs of the user?



THE BARS

What if the amount of air and light that enters a room is controlled by a central system that can be adjusted to suit the needs of the user?



DC4

DIY Challenge

—
chosen focuses: mental health problems of isolation, unbalanced work/life
routine and lack of colleague connection

DC5

Aging Workforce

—
design for those growing in age and physical and mental limitations

DC6

Retaining Human in Design

—
design with philosophies drawn from wabi-sabi, hygge and humor

Top 3 Directions

sketches & mockups

HYGGE, OTTOMAN FLOOR HEATER

for the young professional

functional furniture + floor heater



RESEARCH

A study which targeted 15,000 of 87% of respondents said they felt cold in their workplaces during the winter months. A high 80.7% of respondents said they were **grouchy or grumpy** when they felt cold. 67.8% of respondents said that when they are cold they find it more **difficult to concentrate and less productive at work.** Office heat is your number one work productivity inhibitor.

CONNECTION TO WORK
R/A SMALL SPACE:
 Temperature affects work productivity. People like to be comfortable, mainly and privacy, when working.
 Occupancy level in themselves do it. Comfort or cold. Heat at home. A floor heater does it better. Complete the task.

WHY WORTH PURSUING AS FINAL?

- aesthetic opportunity
- practical idea - heat technology
- personally experienced in coldness about the issue

HOW IS IT MEANINGFUL?

The concept has to be easy to control. When working in colds forming especially when sitting a comfortable work environment is crucial to improve and manage it healthily, mentally and productivity. As the idea has built it could also be used in other and a different place in the home which one could personalize it using different colors etc.



IDEA LAMP

for the busy mind

don't lose your pen or your idea



RESEARCH

When you start to get tired - you just before bedtime, late at night - that's the result of your body producing chemicals that block dopamine receptors in your brain. Chemicals like adenosine which interact with the waking arousal system and other dopamine-relevant neurotransmitters are produced throughout the day to interact with the dopamine receptors and produce the result of feeling of exhaustion or simply being of energy.

Your hand starts to get heavy - happens to be a major dopamine hub in fact in the habit of producing your ideas.

Do an interval of burning through all of your energy during the day (.) your hand starts to get too heavy - I cannot think of other reasons but it could be worth exploring something something going on in the brain.

Without the hand starts to continuously focus on new, incoming information from the world around you other parts of the brain (.) are free to run the normal and generally avoid **misinterpreted ideas.**

Exhaustion, it appears, can spur creativity!

Why this is how creation of light and heat to reproduce the effect of dopamine-relevant neurotransmitters in the brain.

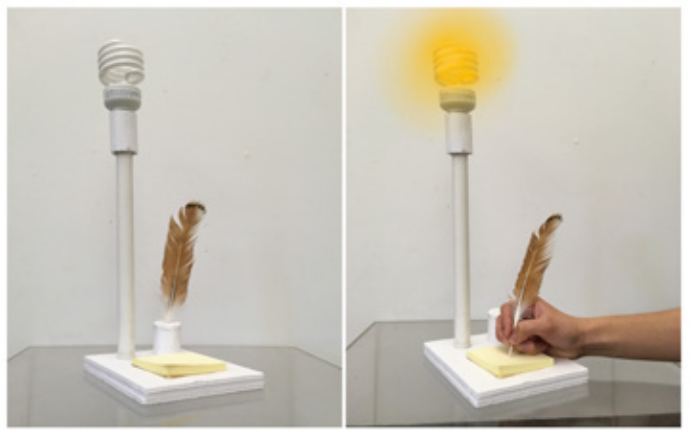
CONNECTION TO WORK
R/A SMALL SPACE:
 Information and ideas need to be kept to work. The ones work space is not well organized being able to do things come not only during the night but also at night.
 With this product, one would not lose the pen or (.) the "light" to turn on the light. Something that would be used in their idea, as the light bulb on the desk gets out.

WHY WORTH PURSUING AS FINAL?

- uses simple technology but holds opportunity for more advanced technology
- available and easy to use in existing indoor environment
- makes a creative need to record ideas

HOW IS IT MEANINGFUL?

This is a practical interesting product as it metaphorically signals that turning on an idea when really producing light for one to record it. It holds meaning when it is used as the instrument by which one may come up with something original or simply not forget something they look in that sense it makes one productive too.



FILED

for the aging workforce

access your files at eye level



RESEARCH

It is estimated that **82 to 90 percent** of adults have back pain (.) a back condition often involving neck and thigh (.) back pain.

Mobile systems or change desks are common (.) they are commonly caused by repetitive work of force from heavy non-adjustable mobile cartcases.

Mobile systems - the desk looks short **shorter when you are bent over and lifting** something that they can happen during the movement of moving your desk back. It requires for their eye can when leaning over.

The number of Americans over age 65 in the labor force is expected to increase from **36 million in 2010 to 42 million in 2020.** 30% of 2010 aging workers will have **major, one-quarter of the labor force** - a major challenge in coping with and managing the needs of the aging workforce.

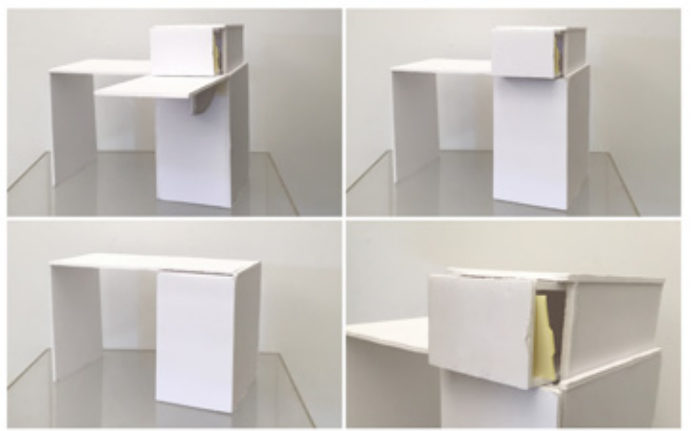
CONNECTION TO WORK
R/A SMALL SPACE:
 A person can be open to access. Having to lean over is not safe or comfortable for an aging worker when at work.
 What if you could bring the files to you without leaning over and straining your back?
 This desk does it by having a lift system when the desk that brings the files up and out in front of you. You can then stay in a seated position and access.

WHY WORTH PURSUING AS FINAL?

- with aging workforce it would be a well-needed concept
- would challenge the furniture industry
- is available for modern and modern environment

HOW IS IT MEANINGFUL?

Many people, especially who age, don't want to be in a sense of shame due to the inability or challenge to perform a specific task over the top is to simply use through the and that provide a challenge to one, esp. an aging population. This product can show them an alternative with using moving that work the most productive and efficient way to use.



Chosen Direction

Ottoman Floor Heater

why an ottoman with a space heater and
how is that meaningful to the user?

—

be comfortable while working

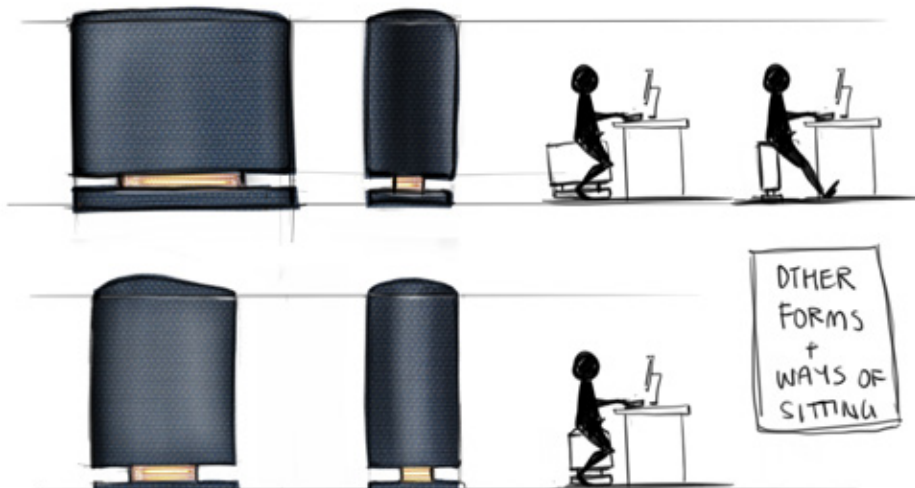
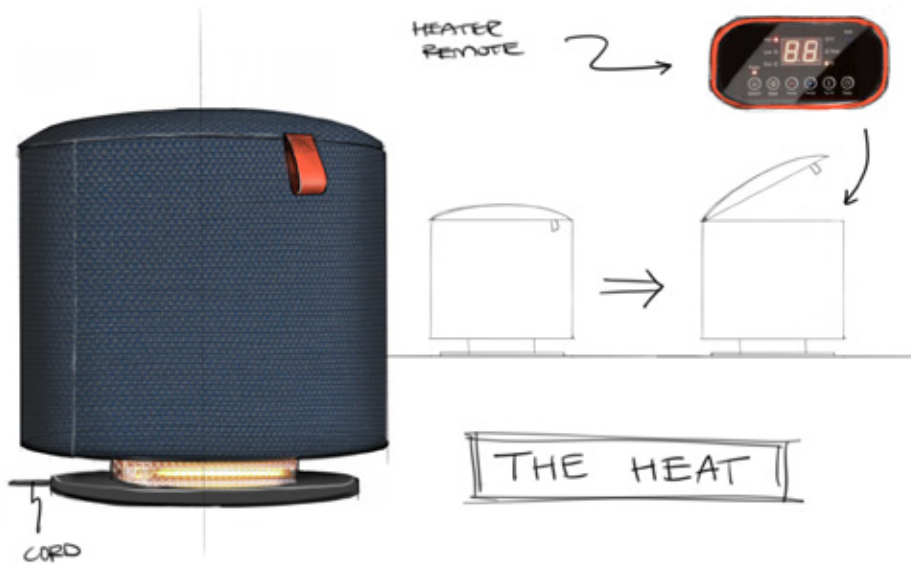
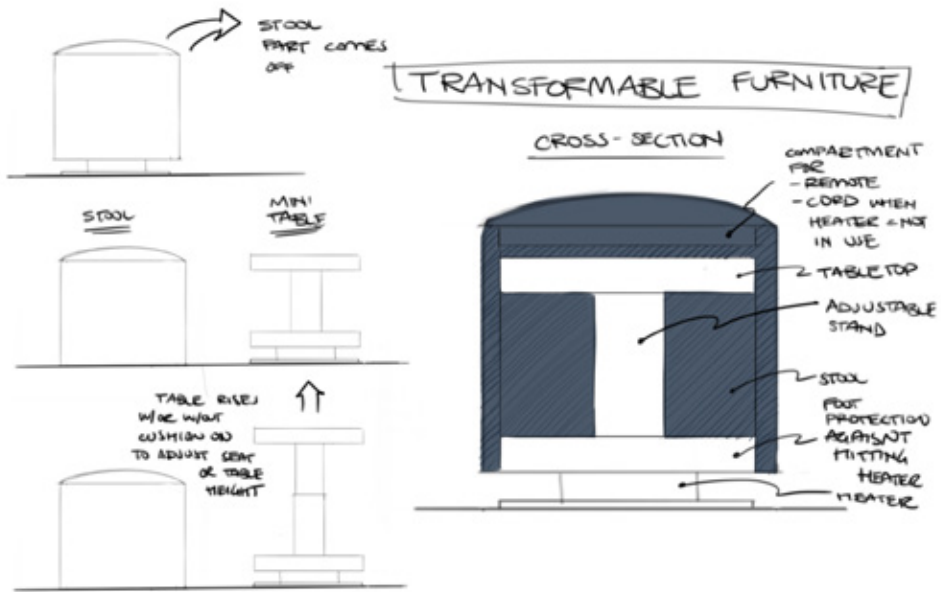
be productive

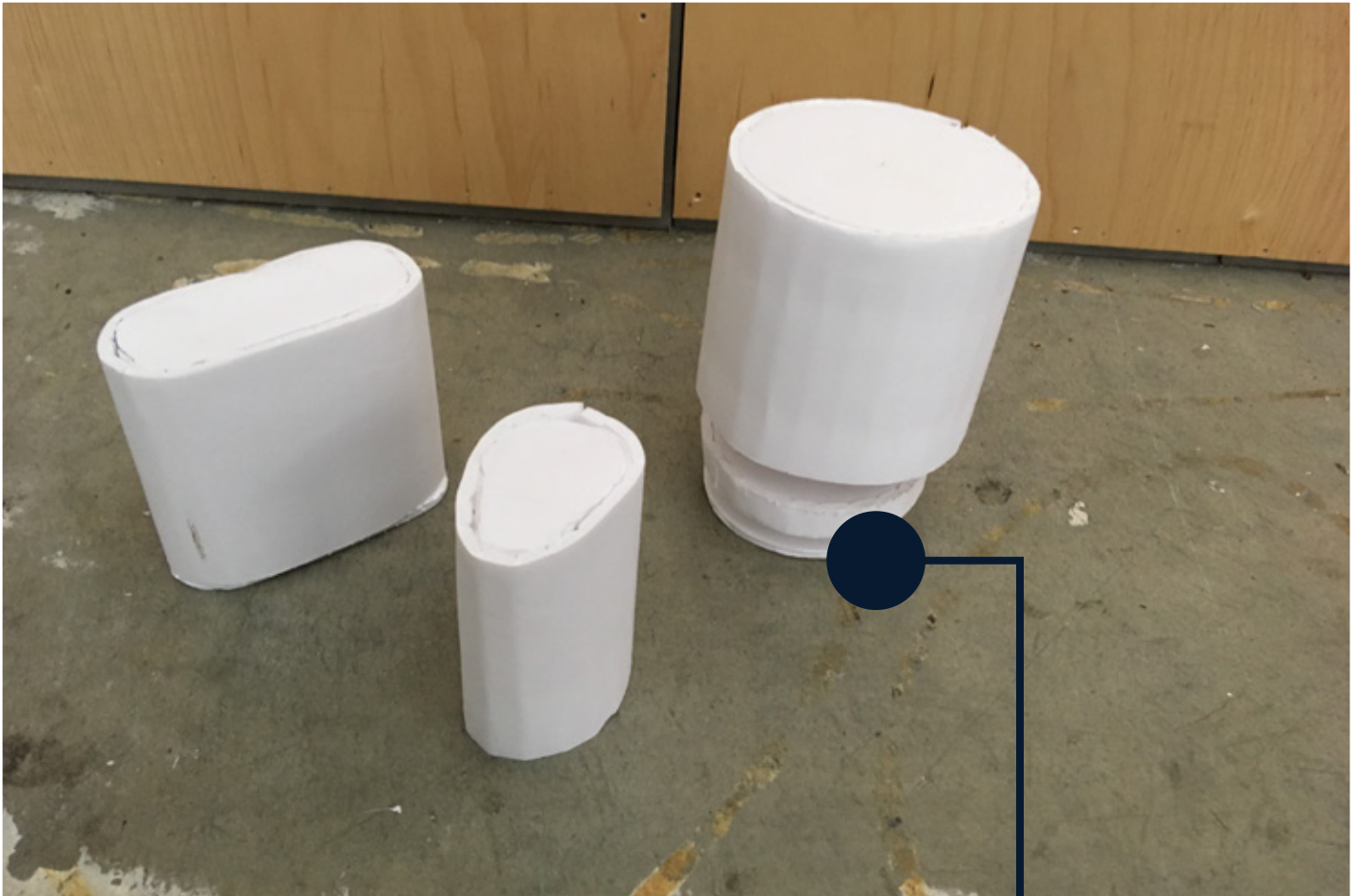
take time to relax

transform your area

embrace the *hygge* design philosophy



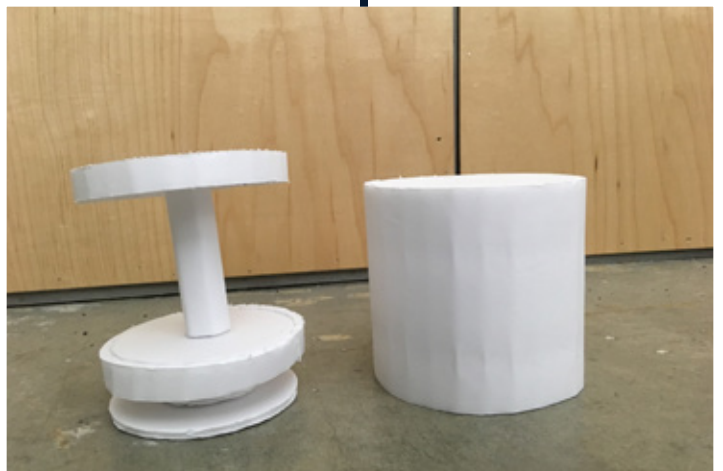




sketches and mockups

—

at first exploring the direction of a cylindrical form and how it could be multi-functional with...
an ottoman
heater
tabletop with adjustable height



Research

work and climate

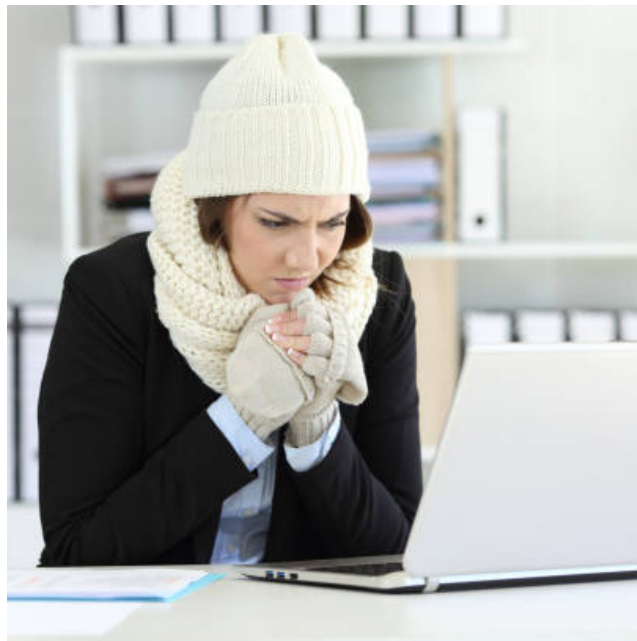
a study done in England:

“A total of 67% of respondents said they felt cold in their workplace during the winter months. A high 80.9% of respondents said they were grumpier or unhappier when they felt cold. Furthermore, 82.3% of respondents said that when they are cold, they find it more difficult to concentrate and feel less productive at work.”

Office heat: Is your workplace too cold for productivity?
(<https://www.humanresourcesonline.net/office-heat-is-your-workplace-too-cold-for-productivity/>)

“The indoor temperature affects several human responses, including thermal comfort, perceived air quality, sick building syndrome symptoms and performance at work.”

Room Temperature and Productivity in Office Work
(<https://cloudfront.escholarship.org/dist/prd/content/qt9bw3n707/qt9bw3n707.pdf>)

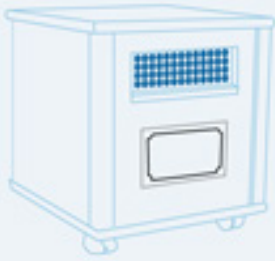


what's already on the market?

heated wearable
foot blanket heater
space heater
heated blanket
chair warmer
heated rug



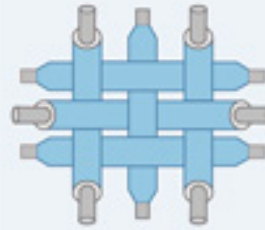
space heaters & heating technologies



Infrared heaters

Infrared heaters emit heat using electromagnetic radiation.

The best thing about these heaters is that they can work in any type of atmosphere.

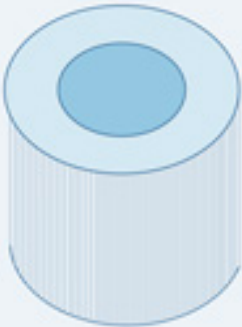


Fan Heater

Fan heaters use an electric element to generate heat.

The heat is then carried away from the heater with the help of a fan.

These heaters heat up a space faster than other types of heaters.



Natural Gas

Natural gas is relatively cheaper than electricity. These heaters actually have a flame lit inside.

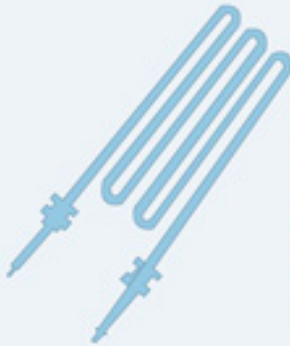
The flame heats up the ambiance. The only issue with these heaters is the carbon monoxide buildup in a room.



Ceramic

Ceramic heaters generate heat with the help of wires. These wires pass through ceramic plates.

When electricity passes through these wires, they heat up. Wires, they heat up.



Electric

Electric heaters use resistors that generate heat.

The resistors help in converting the electricity passed through them into heat energy.



Micathermic

Micathermic heaters use mica covered heating elements.

These elements are relatively thinner and lighter.



Convection

This heater uses convection currents to heat up the air.

When the air heats up, it rises and heats up the ambient air.

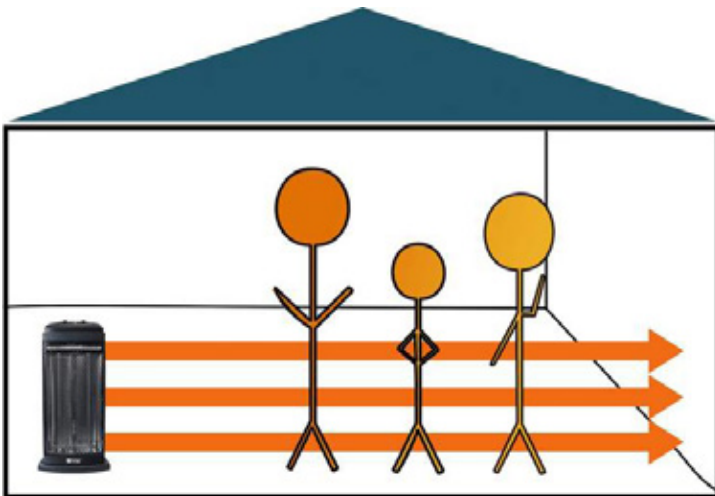


Reflective

Reflective heating does not incorporate any electrical aid.

It uses glass or foil to trap the heat within a space.

The heat cannot escape from the space, resulting in the space being heated.



Radiant:
warms objects; provides direct heat



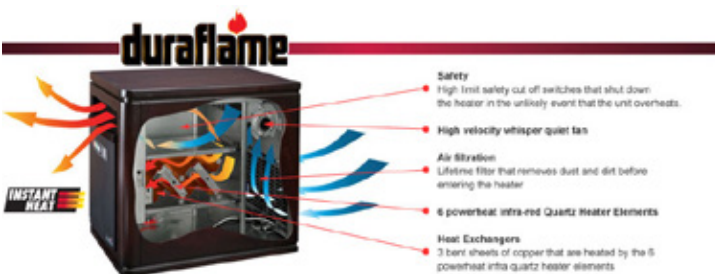
heating element chosen: *infrared*

why infrared heating?

- heats immediately
- good for small spaces
- silent
- most designed to look like furniture
- warms people or objects in their path (like the sun)
- heat stops when it is turned off
- doesn't dry out the air so the moisture doesn't change

how it works...

How an Infrared Heater Works



- 4 Replaceable heat elements**
Six replaceable quartz infrared heating elements are warranted for three years.
- 3 The infrared heat chamber**
Cool air is heated by approximately 115 degrees in the heat chamber.
- 2 Dual quiet circulation fans**
Dayton-brand fans operate quietly and effectively to circulate air through the heat chamber and into the room.
- 1 Washable Air filter**
Entering through the back - away from the thermostat - cool air runs through a washable, long-term-use filter.
- 5 Comfortable, Balanced Heat**
Even, permeating heat keeps floor-to-ceiling temperature consistent within 2 or 3 degrees.
- 6 Safety Switches**
Redundant thermal switches shut heater down safely in the unlikely event of overheating.

Inspiration

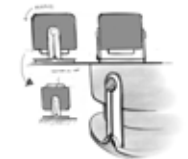
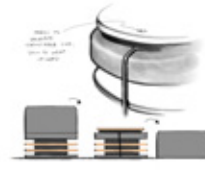
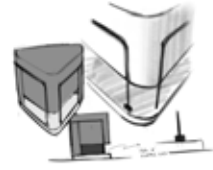
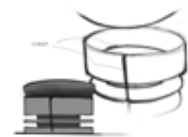
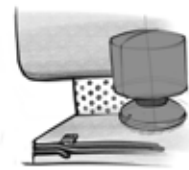
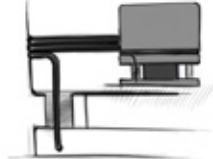
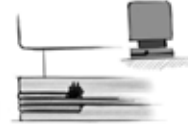
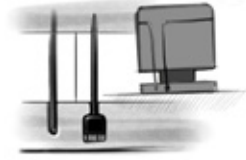
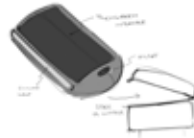
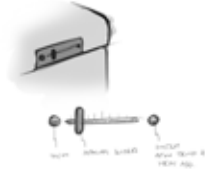
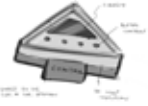
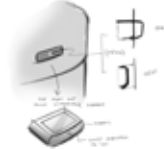
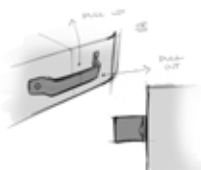
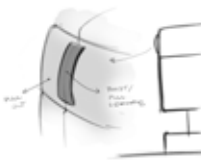
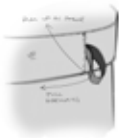
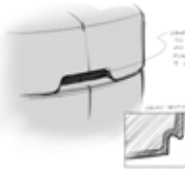
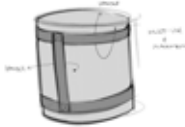
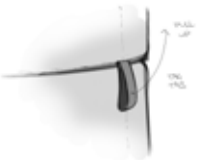
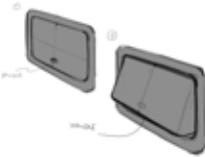
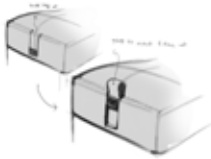
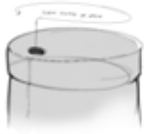


Refined Design

30 sketch details and a full scale mockup

—

sketch details for handle, controls and cord wind up





Finalizing Details

interview and thumbnail sketches of refined details and components

what shaped ottoman?

-

interview with the Frise couple and their use of ottomans...

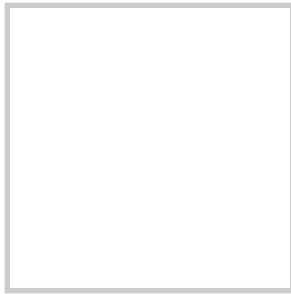
extra table

step stool

extra seating

ergonomically helps to kneel on to read against bed (if low enough)

...and reasons why they like a rectangle over any other shape

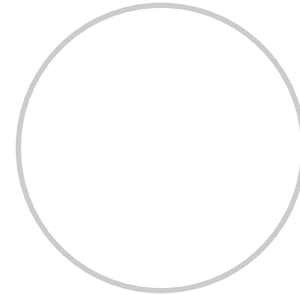


pros

- can fit into a corner or in front of a couch nicely
- standard shape

cons

- awkward when wanting to spread feet apart, feet placement too close

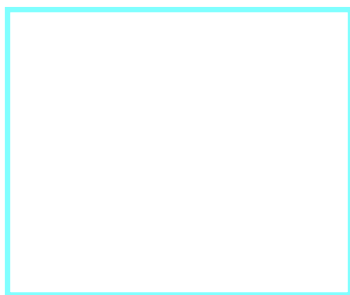


pros

- unique and fun shape

cons

- awkward when putting feet on, must twist feet in
- doesn't line up with a couch or corner

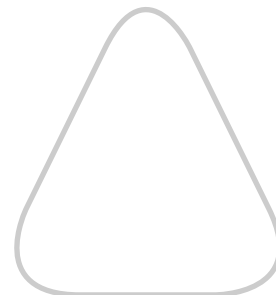


pros

- can fit into a corner or in front of a couch nicely
- (some) wide enough for holding two papers side by side
- can place feet apart comfortably

cons

- may get a bit big

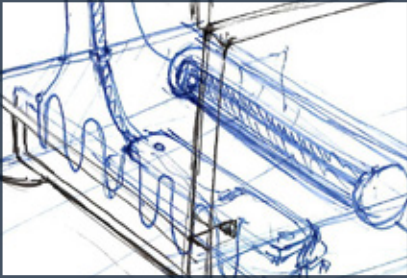


pros

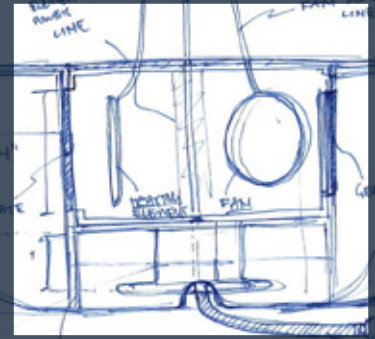
- fun shape

cons

- feel either twist in when placing on or legs dangle off when both resting on because of uneven sides
- won't fit in corner nicely



interior components of heating elements and fan



cross section connecting to exterior cord



cord wind up on bottom

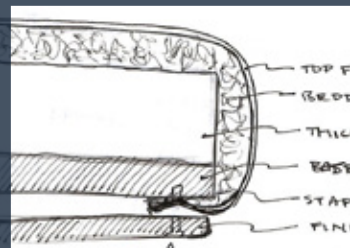
details...



control panel buttons



cushion contour



upholstery plan



Final Mockup

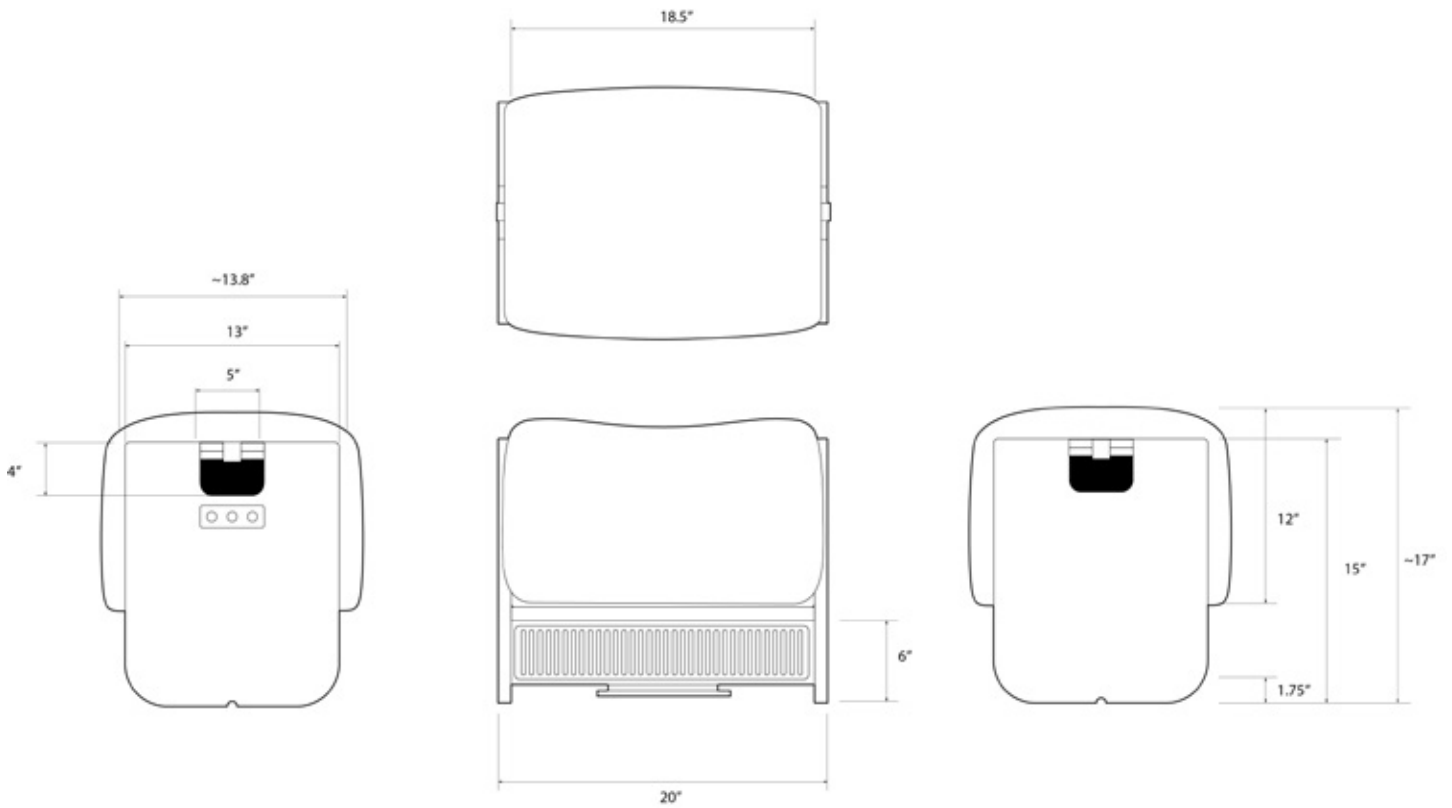
Final Model

Persona
Orthographics
Build Process
Details
In-Use

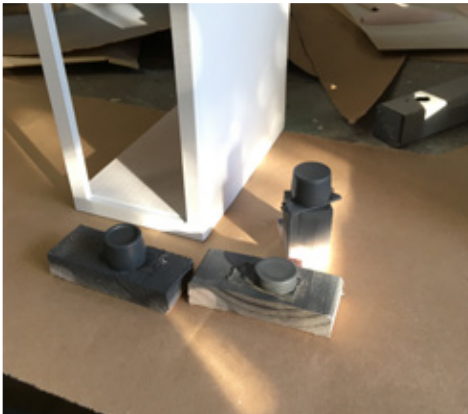
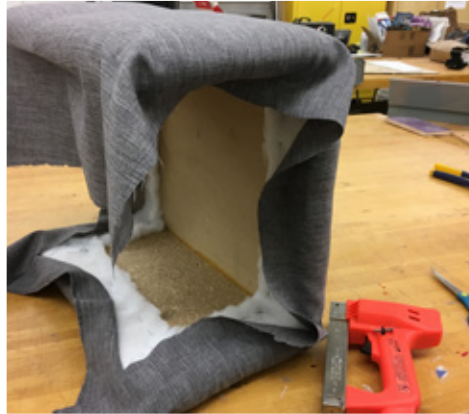
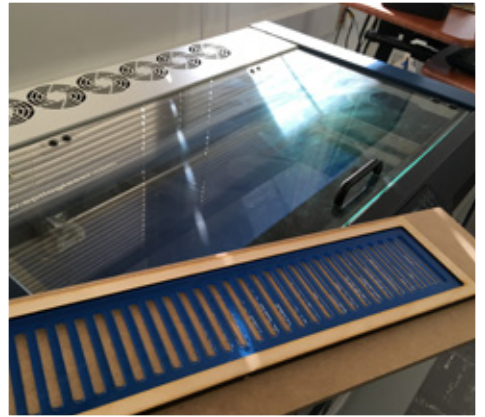
Persona

Art Mendiola | 25 yrs old

I.T. Professional living and telecommuting in San Francisco.



Orthographics



Build Process

cutting wood, laser cutting, upholstering, 3d printing, sanding, edge
banding, painting and assembly





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Details





In - Use

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tabs to pull up ottoman



enjoy the footstool



and extra table top



the table top is stable enough to hold a laptop and wide enough to fit two 8"x11" sheets of paper next to each other





THANK YOU