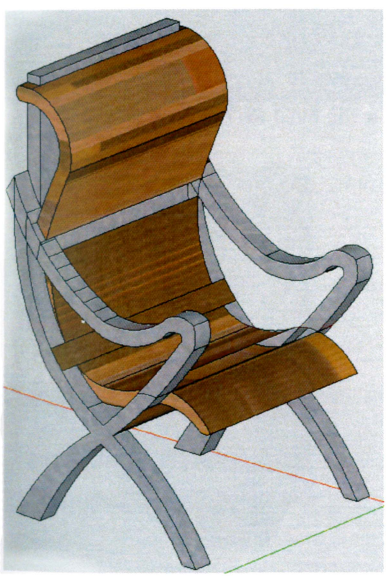
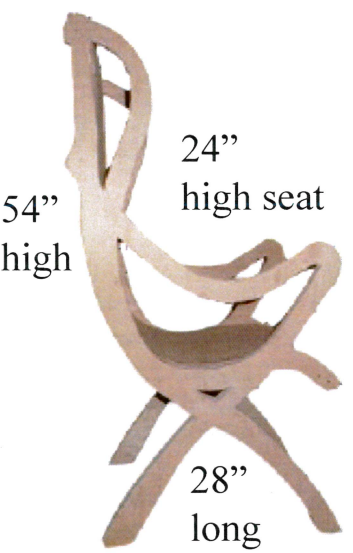

GET BENT
A SENIOR
PROJECT
HIGH TECH HIGH
ART AND PHYSICS
GLOAG - ROBIN

The Taffy Sitting Chair by Alexis & Eli

We found the kayra over the internet. Our chair is a plausible bent-wood adaptation. "Kayra" $320

Right before we started building our proof model, we made our google sketchup model (bottom left) to get a feel of how our design would look and function off the paper. The sketchup model helped us get a feel of how we would make the actual chair and to see if the measurements felt right. The sketchup model made us ultimately simplify the design of the frame to one solid piece, as apposed to 3 seperate and interlocking pieces. Afterwards we made our proof model (bottom right) which was built to half scale. Our proof model consists of one peice of wood instead of three pieces interlocking together, and the back / seat of the chair was made of laminate



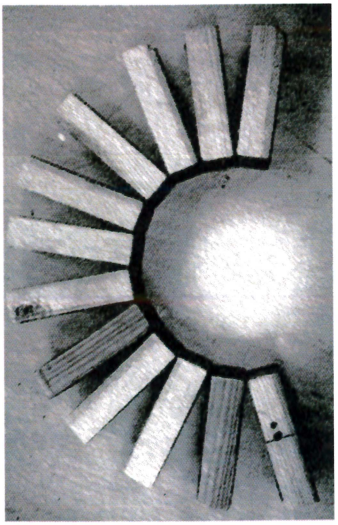


DAHLIA

By: Laura Bustamante & Shanelle Mosley

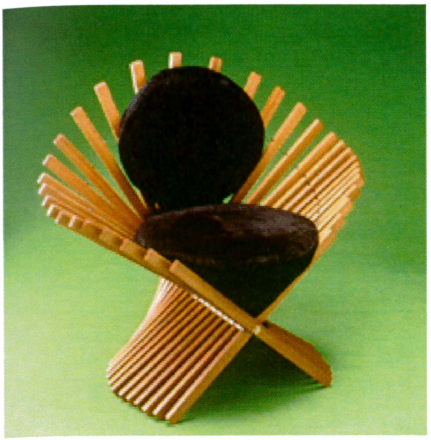
Inspiration

Clip Chair
by MOOOI
$1140



We were inspired to design a piece of furniture that was both aesthetically pleasing and functional. While the project was to create a chair, we wanted to create something that would sit more than one person. **DAHLIA** has the capacity to seat about six people and its accordian-like movement makes it simple to store away when not in use.

Our proof model was made ~1/9th scale.

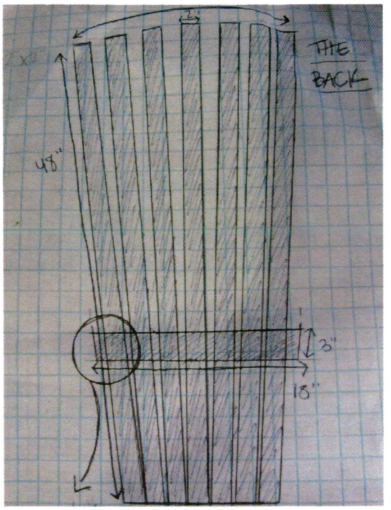


Robert Lewis Bliss
Teak
30" x 27" x 24"
1993

The Peacock

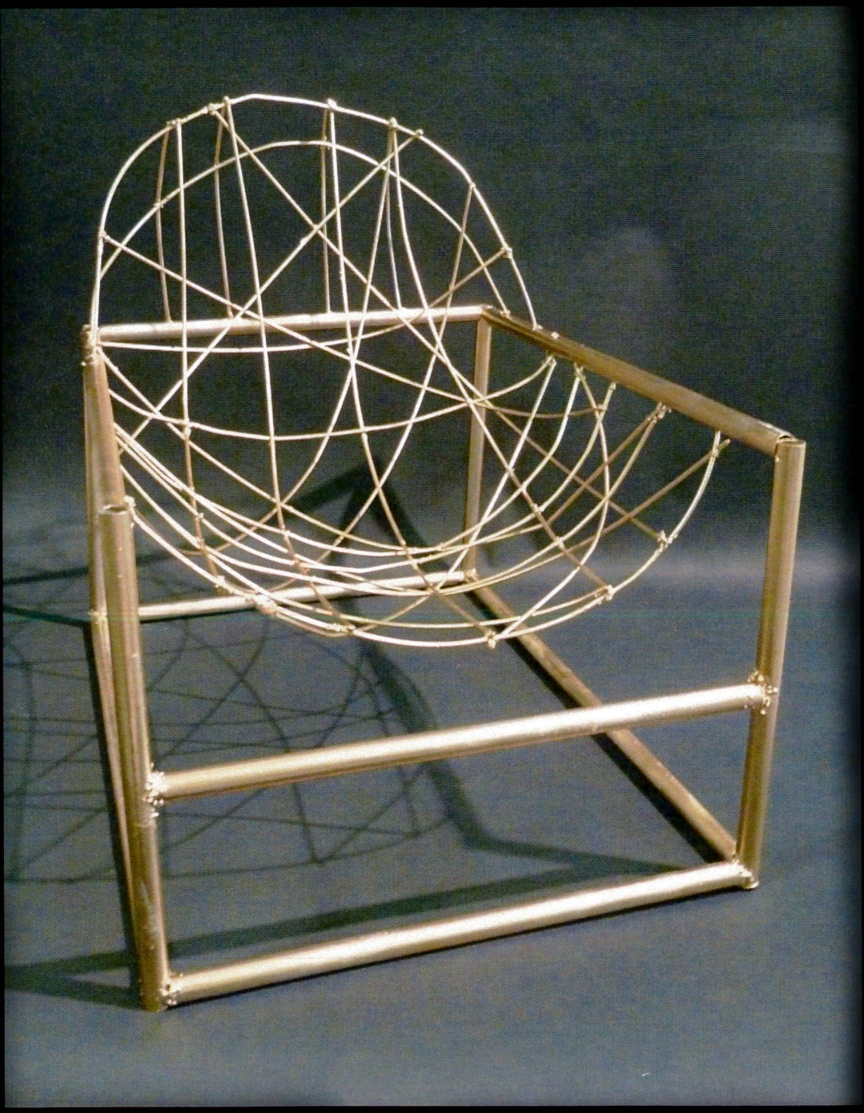
Shellby Hefner & Coli Barth

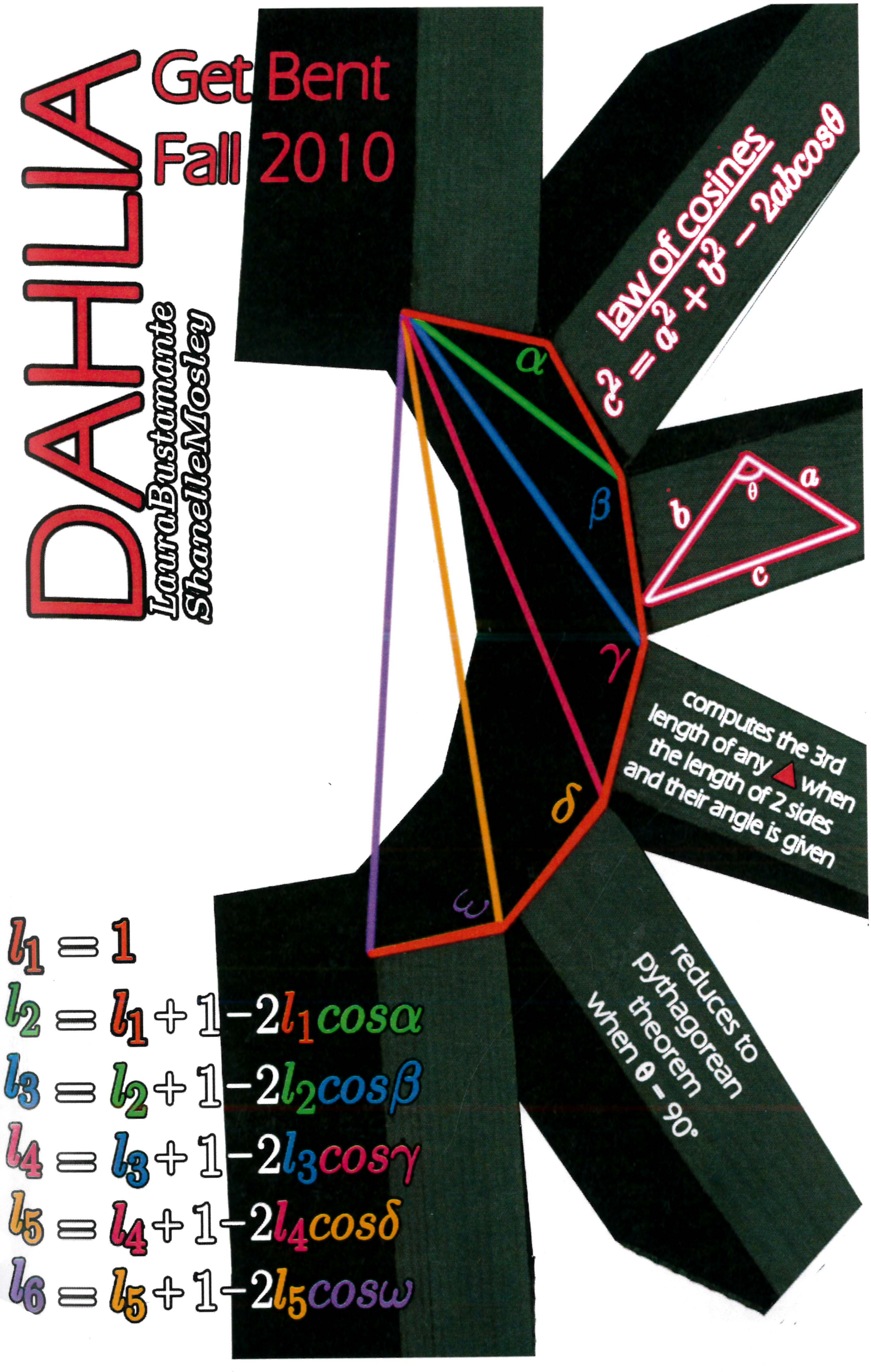
This chair, by Robert Lewis Bliss, is made out of Teak and was the source of our inspiration for the chair we're building. The design is elegant and clever, and it is something that we would like to build our creation off of. As you can see below there will be a few changes to the layout. Overall, though, the idea for our chair was taken from this art piece.



This is a sketch of our final chair design concept. We took ideas from the original chair design we found, and other concepts from chairs we saw in books and threw them together, added our own ideas, and came up with the chair design below. The chair itself is roughly four feet tall, with sides that are about two feet tall and a seat that sits eighteen inches above the floor.

This is a half-scale proof model of what we wanted our finished chair to look like. At first, our chair back was going to be significantly taller, but we had to sacrifice aesthetics for practicality, and shortened the length of the back. Thus, we also had to change the length of the sides and the width of the seat, to maintain proportion. But in the end, the finished design was to our satisfaction.





DAHLIA
Get Bent
Fall 2010
LauraBustamante
ShanelleMosley
law of cosines
c² = a² + b² − 2abcosθ
a
b
c
θ
computes the 3rd length of any ▲ when the length of 2 sides and their angle is given
reduces to pythagorean theorem when θ - 90°
α
β
γ
δ
ω
l1 = 1
l2 = l1+1−2l1cosα
l3 = l2+1−2l2cosβ
l4 = l3+1−2l3cosγ
l5 = l4+1−2l4cosδ
l6 = l5+1−2l5cosω

Shellby Hefner and Coli Barth
The Math Behind the Pfauhaus

In our chair, we used a lot of trigonometry, which included a lot of angles and equations. We also labeled the forces that would act when our chair is sat in, such as weight, and the reaction from the ground.

Trig used to find different lengths:

(a) $\sin 10 = \frac{x}{30}$, $x = 5.2''$

(b) $\cos 10 = \frac{a}{30}$, $a = 29.5''$

(c) $\sin 10 = \frac{x}{15}$, $x = 2.6''$

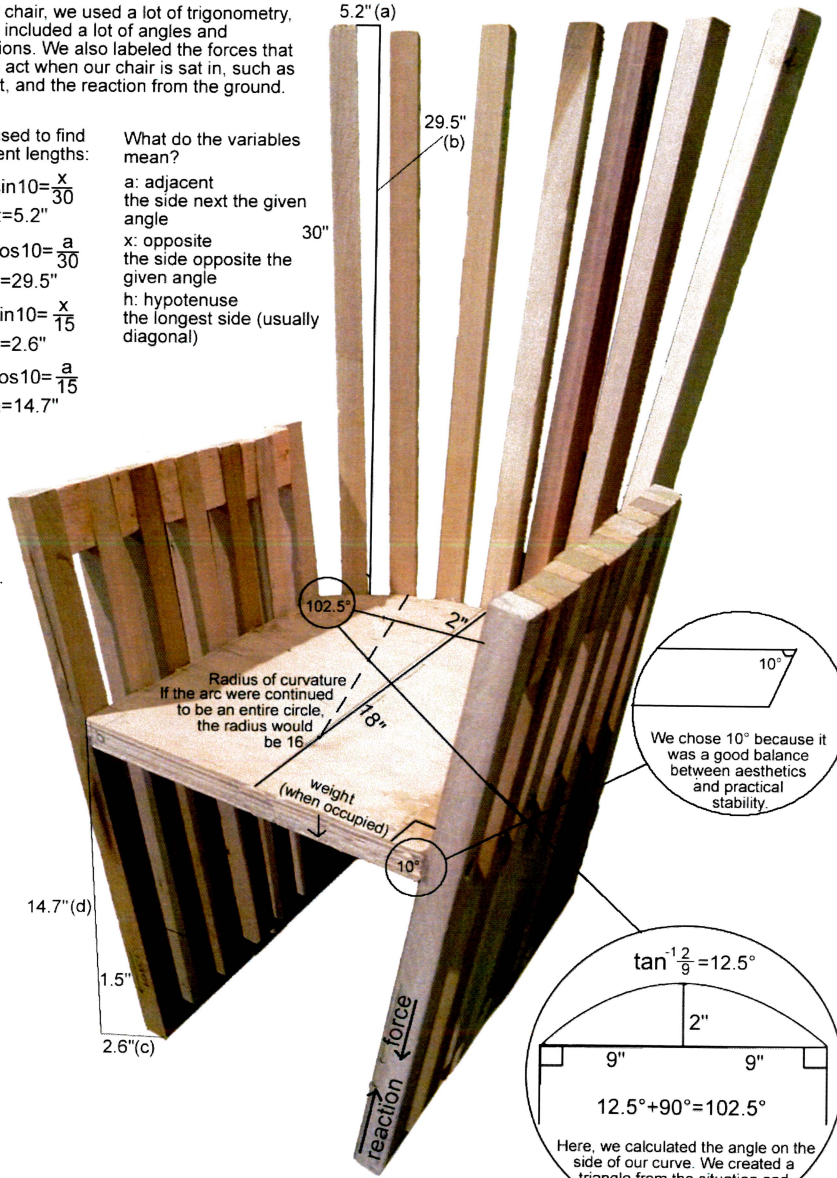
(d) $\cos 10 = \frac{a}{15}$, $a = 14.7''$

What do the variables mean?

a: adjacent
the side next the given angle

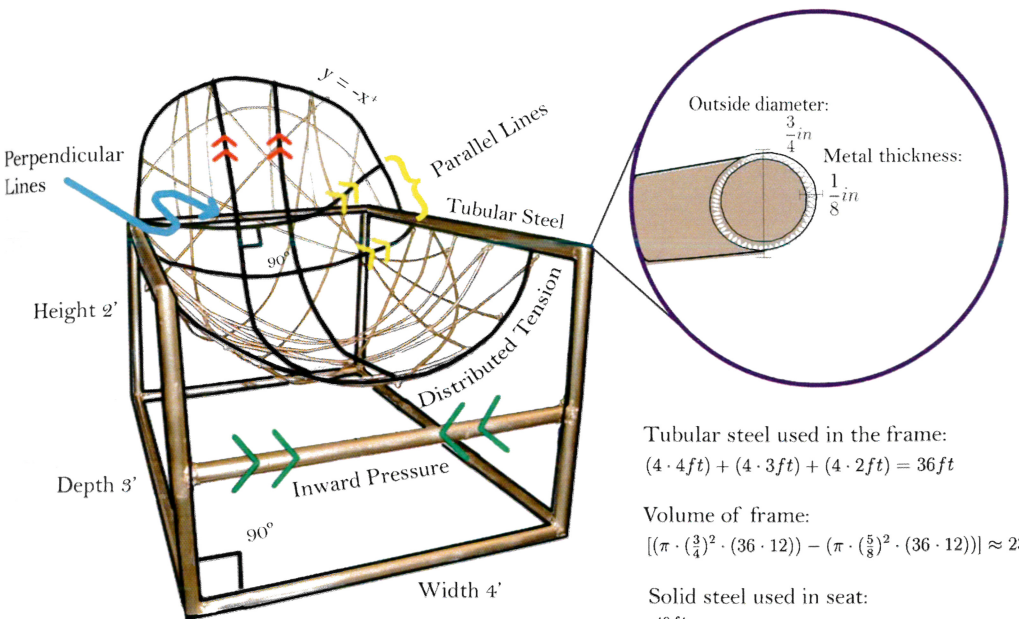
x: opposite
the side opposite the given angle

h: hypotenuse
the longest side (usually diagonal)



Physics behind a Masterpiece

Viccarbe



Tubular steel used in the frame:

$(4 \cdot 4ft) + (4 \cdot 3ft) + (4 \cdot 2ft) = 36ft$

Volume of frame:

$[(\pi \cdot (\frac{3}{4})^2 \cdot (36 \cdot 12)) - (\pi \cdot (\frac{5}{8})^2 \cdot (36 \cdot 12))] \approx 233in^3$

Solid steel used in seat:

$40ft$

Volume of steel in seat:

$(\pi(\frac{1}{4})^2 \cdot (40 \cdot 12) \approx 94ft^3$

Total steel in chair:

$94 + 233 = 327ft^3$

Zac

Kalena

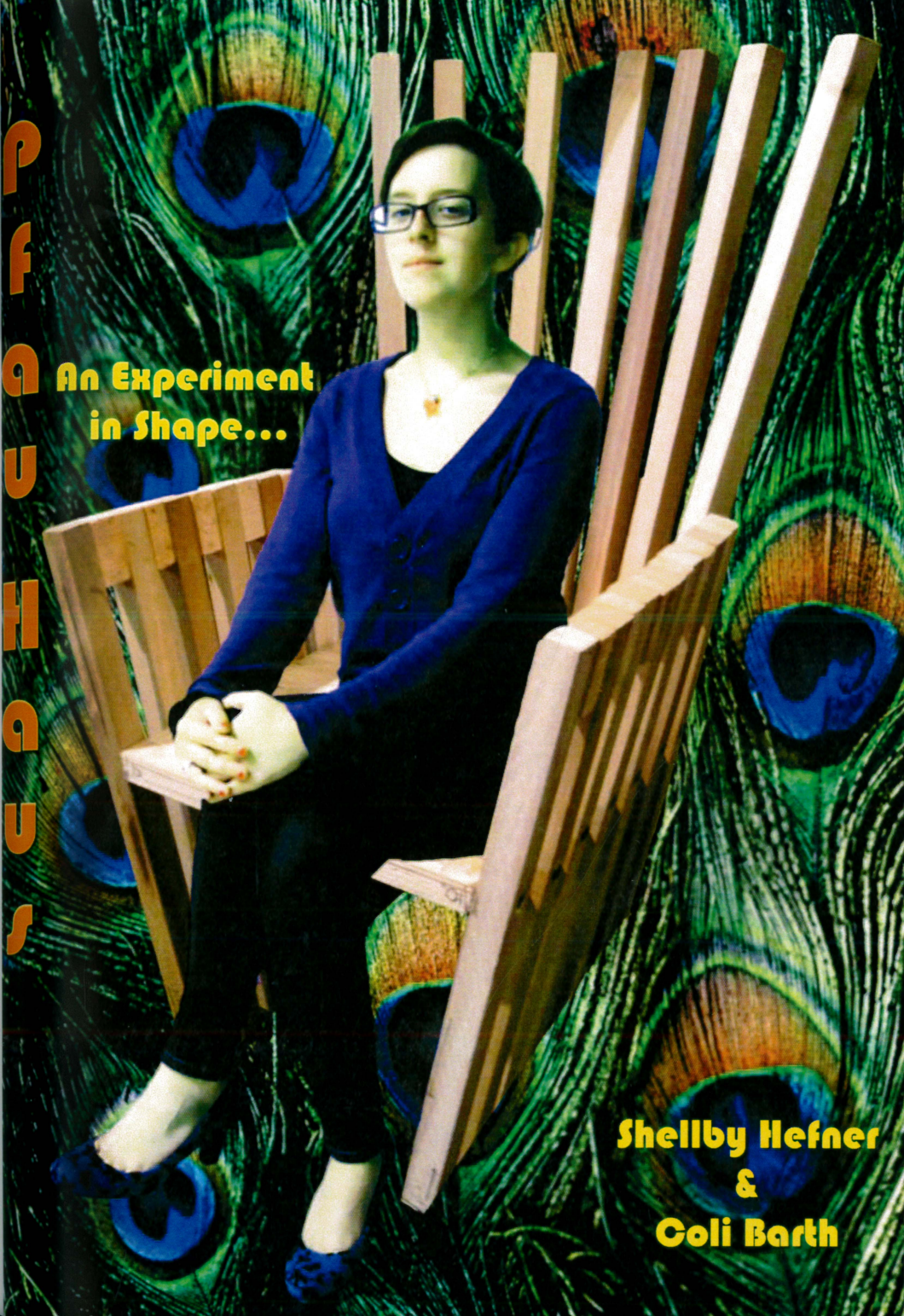
Breauna

WHEN LIFE
THROWS YOU
A CURVE,
SIT ON IT.

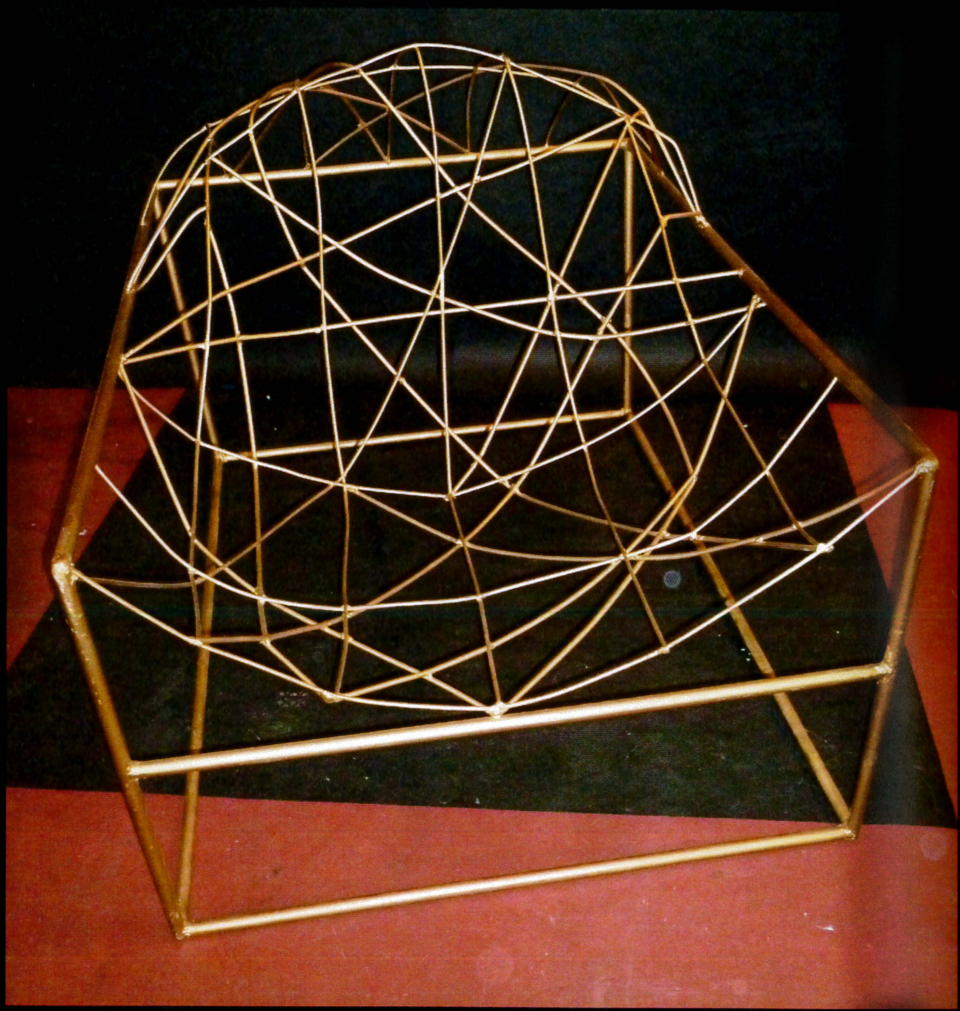
THE TAFFY

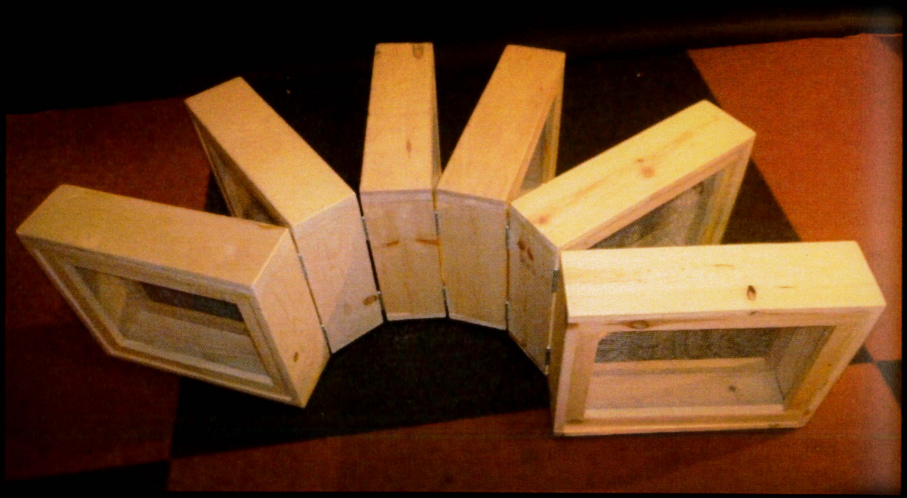
BY ALEX AND ELI


COFFEE SHOP
DAHLIA
Laura Bustamante & Shanelle Mosley


Pfau Haus
An Experiment in Shape...
Shellby Hefner
&
Coli Barth


Sit on art.
Comfort you can marvel at.
Senior Exhibition
Fall 2010: Get Bent
Zac Wendroff
Kalena Clausius
Breauna Guzman





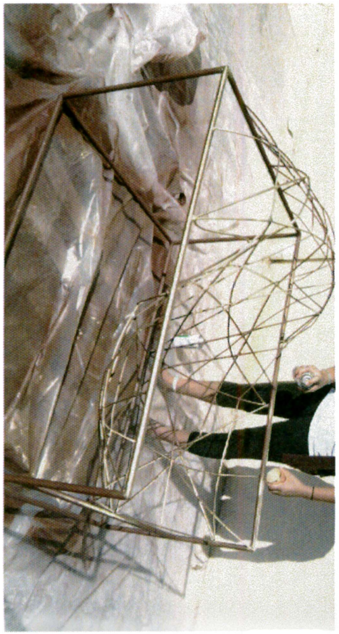

CINTAS

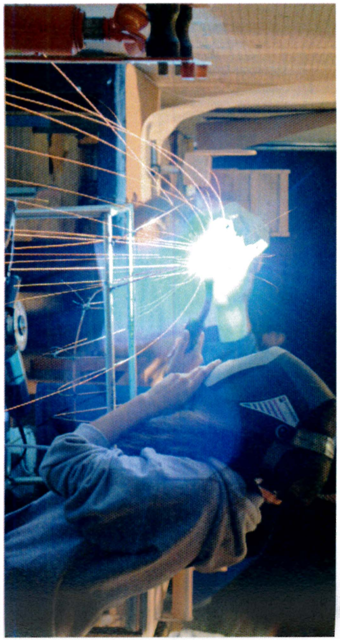
Spray Painting our Throne
We decided that gold was a fitting color for our chair.

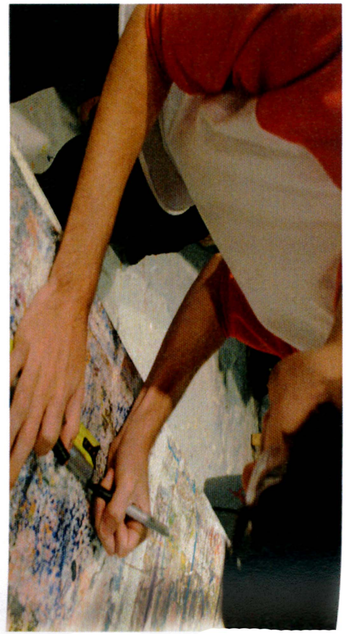
Process and execution
Welding, crafting, and braining to life our chair

Cut and organize
carrying out the necessary jobs to attain our materials

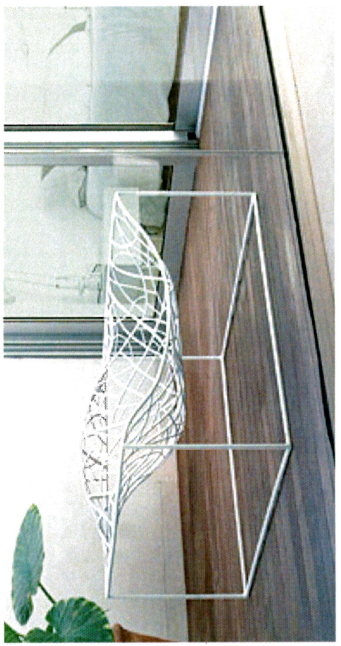
Preparation
Bringing the calculations to life, starting the build process



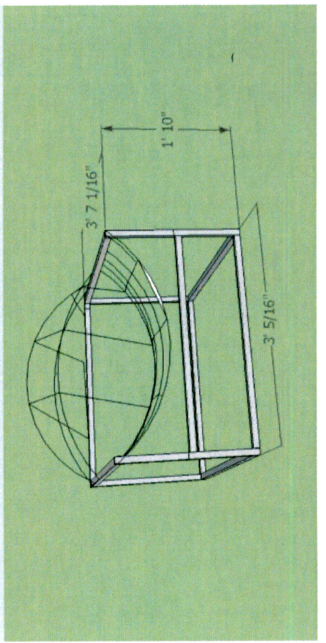




Our inspiration
Viccarbe lounge chair
$6.552.00

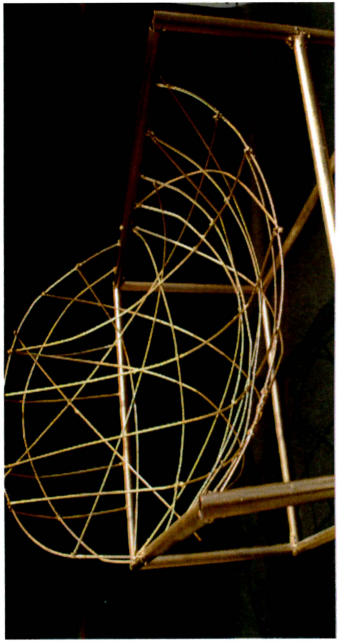


Google Sketch Up Design
A rough draft to attain measurements for our design



3-D Paper Model
Constructed using paper, tape, and hot glue

Half Scale Model
Constructed using pipes and welding wire



THE FINAL PRODUCT

LOOKING BACK...

SHELLBY

During the course of this project, I found that we had a lot of ups and downs, most of the time more downs than ups. I felt like the chair project was a lot of work, but that it was definitely worth it in the end. I never knew how much work was put into making something as common as a chair., and now know how slave children feel. I felt that I was really attached to our first idea, and when we had to change it I felt rather angry and doubtful about the new ideas that we were creating. But as we got the building underway, I found that I was becomming more and more happy with our chair, especially by the time we were finished. As far as our lamp, I immediately fell in love with the idea, and am definitely going to make some of my own for my house.

Overall, I'm really impressed with us. We worked hard, and not only learned skills along the lines of handiwork, but also personal lessons such as handling amounts of work, and how to master time management.

COLI

Creating the chair was an interesting and worthwhile experience, one that had its up's and down's. We managed to create an aesthetically pleasing work of art that also served a functional purpose. It took time and certainly a lot of effort, and while sometimes we lost initiative and felt like giving up, we kept working and eventually succeeded.

This project taught us many practical skills, such as woodcraft and design, but also many personal skills. We learned to appreciate the time given to us, to take advanatager of available resources, and to work as hard as possible in the beginning to afford us time for revision in the end.

This project challenged us to work outside our comfort zone and try new techniques and skills we had never attempted before. In the end, we not only produced a great looking chair and lamp, but also gave us t\he tools to do something similiar to this in the future.

This project had two main elements, one in art and the other in math. The combination of these challenged us both creatively and academically. Designing a chair that is inteded to look good and be comfortable at first made us nervous when taking into account that we needed to incorperate physics as well. In the building process we found that some curves and properties we leaerned in the physics class applied naturally to our products.

Many of the other groups in our class were partnerships, having three people in our group was helpful for the most part, but raised the expectations of our work. Being able to cooperate with two other people is a skill in itself, attempting to respect and accomidate the ideas and create outlooks of each person.

The final unique part of our group was the direction we choose with material use. Being the only ones working with metal we faced some issues gathering what we needed, and putting the chair together. Wood was much more accessable to the class but we thought our design was good enough to stick to our original plan throughout the process. After becoming capable at welding and metal bending we were able to work on our chair and diligentyl and effectively as those using wood.

In the end we gained a lot from this project. We have become better group members, craftsmen, artists, and mathemticians. In the future we can apply the skills we learned through the Get Bent project to provide future success.

PLEASE VISIT OUR WEBSITE
JEFFROBIN.COM
AND CLICK ON GET BENT

THIS PROJECT WAS
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