

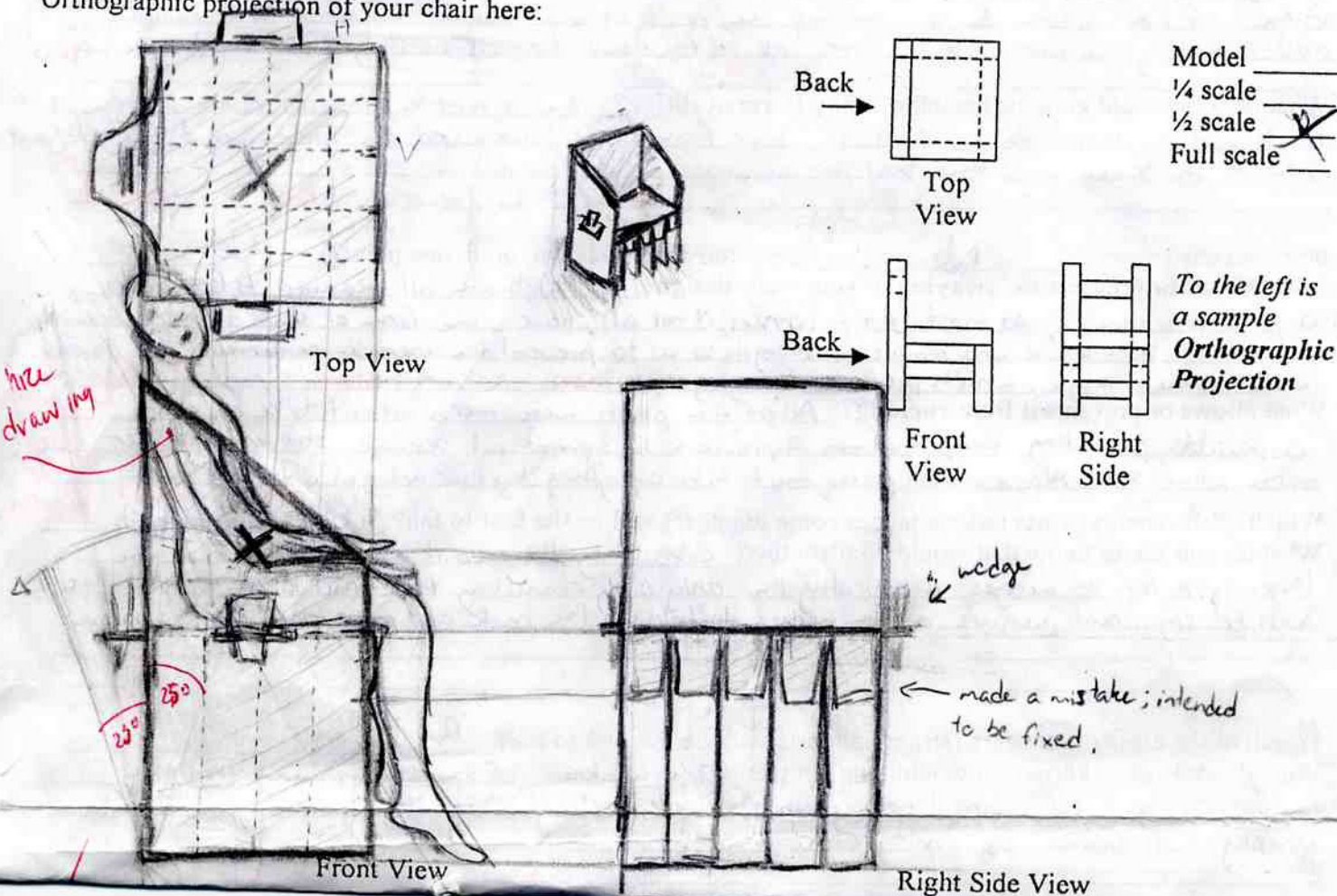
Great job you guys. see me on a few things. see comments,

Chair Idea Evaluation

Name Lauren Witter, Tajreen Hedouf, Simon Li Date 12/12/03 Group A Period 6

Instructions: Complete a "Chair Evaluation" worksheet for each design model you build. It will serve as a record of how the design changes. Responding to the questions will help you clarify your thoughts and decisions. It will also help you assess what you understand clearly, what you are aware of and what you are still unclear or fuzzy about. For help with the orthographic projection consult a textbook or your teacher.

Orthographic projection of your chair here:



1a) Place an X on the orthographic projection indicating where the center of gravity will be with someone sits on this chair. You must show this point on at least two different views.

How did you determine that the center of gravity is at this point?

From that point, based on the varying weights on different sides of the chair, the chair would mostly balance from all viewpoints. The chair would have to tilt back at least 20-25° in order to tip over.

BE SPECIFIC!

OK. Sounds good.

b. If someone is in the chair and tilts it back on its rear legs just a little, why will or won't the chair fall backwards? As previously stated, because of the lack of a buttress or something along those lines behind the chair, it will be able to fall ~~backwards~~ if tilted at least 20-25°. The weight of the base as paired with that of a person would be able to bring it back down otherwise. Also, the distance between the CoG and the back is slightly ~~longer~~ further, allowing for the ability to fall back down.

2a. Do the legs/base have good compressive strength? Yes.
What gives the legs/base their compressive strength? The columns' cross-sectional surface area becomes greater because of the "+"s formed by the intersections of the H- and V- columns. The ~~space~~ empty space in between the columns is lessened greatly by the number of columns criss-crossing, therefore improving compressive strength because there is less ~~empty~~ unsupported space. Also, the orthotropic lines running vertical contributed greatly ~~because~~ because the folded sheet running through the middle increases cross-sectional surface area of the cardboard making it stronger in compression. Height also is a factor!

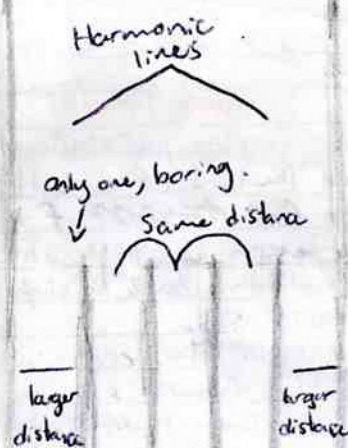
b. What makes it adequate or inadequate for the job? The good compressive strength because of the reasons listed above and also because of the lessened space between the columns. However, in the full scale, as the space inbetween will greatly increase it will compromise the base's integrity by having more unsupported space/pressure points that are ~~not~~ unsupported. We eventually plan to add diagonals inbetween the columns' spaces with the leftover material to cut down on the amount of unsupported/empty space between the columns.

I doubt it. You've got lots of support here.

2b: - shared load
- straight columns.

3. Does the seat bend? No
 What gives (or can you do to give) this seat sufficient strength against bending? The criss-crossing design of the base greatly lessens the space between the columns, making for less unsupported space below the seat, allowing the seat sufficient strength against bending. ✓
4. Does/will the back bend? No Does/will the back tilt? No
 What does or would give the back the ability to resist bending? The ~~arm~~ placement of the orthopedic lines strengthen the material. But that aside, the arm-like things, acting as trusses, connected entirely to the back, minimize the back, moving the neutral axis inwards towards the middle and increasing the distance on either side of the neutral axis, preventing easy bending. A tie not enough compressive strength to be a truss!
see me about this. Doesn't make sense to me.
 What does or would give the back the ability to resist tilting? The arm-like trusses connecting the back entirely to the base holds the back from tilting backward by preventing the angle/joint between the back and the seat to increase or decrease. provided the joints didn't fail (probably is likely to happen.) ✓
5. Does the chair "sway?" No Does the chair rock (pivot on one point?) No
 What allows or prevents the swaying of your chair design? The slots are all measured before cut to prevent looseness; most of the ^(corners) corners, if not all, have some form of truss or hidden triangle to work in both tensile and compressive strength so as to prevent the increase or decrease the degrees in the corner angle, which prevents swaying. Do these pieces in between work in tension or compression?
 What allows or prevents it from rocking? All of the parts were measured out to be as exact as possible, preventing things that were supposed to be symmetrical became shorter or longer on the other side. Also, the seat pretty much held everything together, acting as a tie and beam. Look together ✓
6. Which of the chair's joints (where pieces come together) will be the first to fail? Wedges
 What do you see or know that would confirm this? Considering the second layer of the seat, the layer used for the wedges, is basically the only thing connecting the base to the back, there will be significant pressure on the wedges to hold up the back and prevent it from falling.
7. Which of the chair's members (structural parts) will be the first to fail? Back/wedges
 What do you see or know that would confirm this? The weakness of the wedges mean that if there isn't significant support holding up the back, instead of bending or tilting, it would simply fall backwards and off the chair.
8. Sketch the "dominant" (most important) aesthetic lines (verticals, horizontals, curves, etc.) on the chair. (Do not draw the entire chair here. Select only the lines that give it its visual impact.)

Harmonic lines because the inner lines are supported by the outer, greater ones.



← all four, in between longer ones with greater concentration of energy

Based on our reading of Logic & Design, what do you think these lines convey to the viewer/sitter?

"The uniform straight line is ambiguous; the eye can move in either direction and seeks a greater concentration of energy." Our chair was charged at the ends to give greater emphasis on the vertical aspect of the lines. Our lines are also harmonic because of the reason stated above. ✓

you've got a particular type of straight line, right? Vertical (+ maybe harmonic?)
Think small. Too much focus on detail, above. what is said about there.

+ what do you think it will all mean to a sitter/viewer? Your thoughts based on