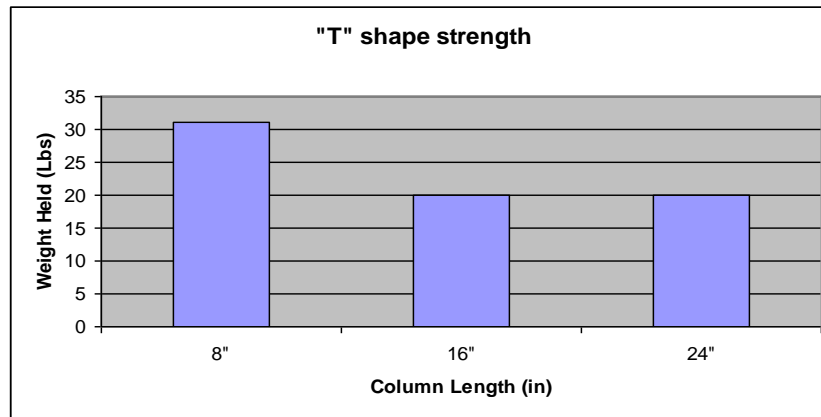


Nittany Engineers Cardboard Structure-T

Individual Results



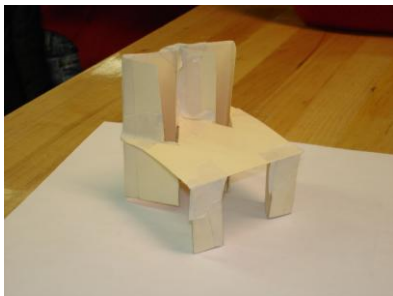
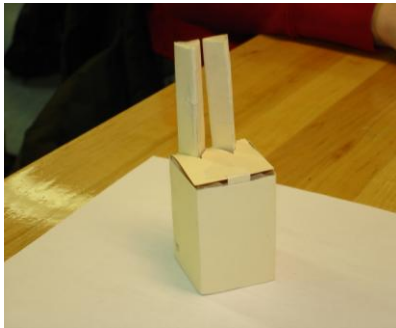
After performing the tests, the first conclusion we could come to was as you increase the size of the column, the weaker the column becomes. So as you look at the results, the shorter 8" columns held more weight than the longer 16" and 24" columns.

Total Results

	id	shape	Column Length		
			8"	16"	24"
Riprap	a	L	13.5	11.5	17
Bipolar Bears	b	C	31	22.5	7
Dream Team	c	triangle	19	8	20
Average Joes	d	III	19	8	5
Nittany Engineers	f	T	31	20	20

After reviewing the other results, we found that the t shape is one of the more structurally sound shapes. Other than the C shape which held the same amount of weight for the 8" column, the T shape held the highest weight for both the 16" and 24" columns.

Concepts



Concept Design

Concept Design A: This design was created for ease of transport. The chair has the ability to “break down” into two separate pieces, allowing it to be easily stowed away. The back of the chair can be removed, just as the legs of the chair can be removed.

Concept Design B: This chair design centered around a traditional chair design, and the design is based on aesthetics. The flap on the seat allows the chair to be deconstructed, allowing for easy storage.

Concept Design C: This chair design is meant to model a sofa design, and is able to be folded into itself allowing for storage. The back of the chair provides back support.

Concept Selection

	Weight	Chair A	Chair B	Chair C	Reference
Selection Criteria					
Comfort	0.3	4	3	2	3
Durability	0.15	4	5	4	3
Ease of Transport	0.15	5	2	2	3
Cost	0.25	3	3	3	3
Aesthetics	0.15	4	4	2	3
Score		3.9	3.3	2.55	3

Overall chair design A is a great design. The final chair will be a two part chair. One might say that it is a complex design because it is a two part chair, however, it allows us to specialize. With the ability to specialize on each individual part, we can create a greater quality product for less money. Also, when we specialize it eliminates more of the possible failure points of the chairs making it more durable. Thus overall it would be a better chair to put into the market. As you can see, we are going with the two part chair because not only does it meet the customer needs, it exceeds that. It does this by ease of transportability and allows us to specialize, minimizing cost and minimizing imperfections. So to conclude we are going with the two part chair.