Northeastern University

Clear Closet

Katie, Bristol, Phil, Jonathan

CAPSULE
Capstone Unique Learning Experience

MUSEUM OF Science

NSF

FOCUS On Children
Boston Public Schools

PROJECT MISSION

Design a durable and multi-purpose closet.

PROJECT GOALS

Design a closet 4' wide and 6" tall.
Develop a stable and safe design.
Utilize strong shelves and bars.
Be aesthetically pleasing.
Cost under $100.00.

PROJECT EVALUATION

Our criteria for evaluating the project were two fold:
1. Meet a minimum of four out of the five goals stated above.
2. Accomplish this in the time allotted.

PROJECT PLAN

Brainstorm.
Research needs, dimensions and materials.
Discuss design and functionality.
Cost and analyze materials.

Repeat as necessary.
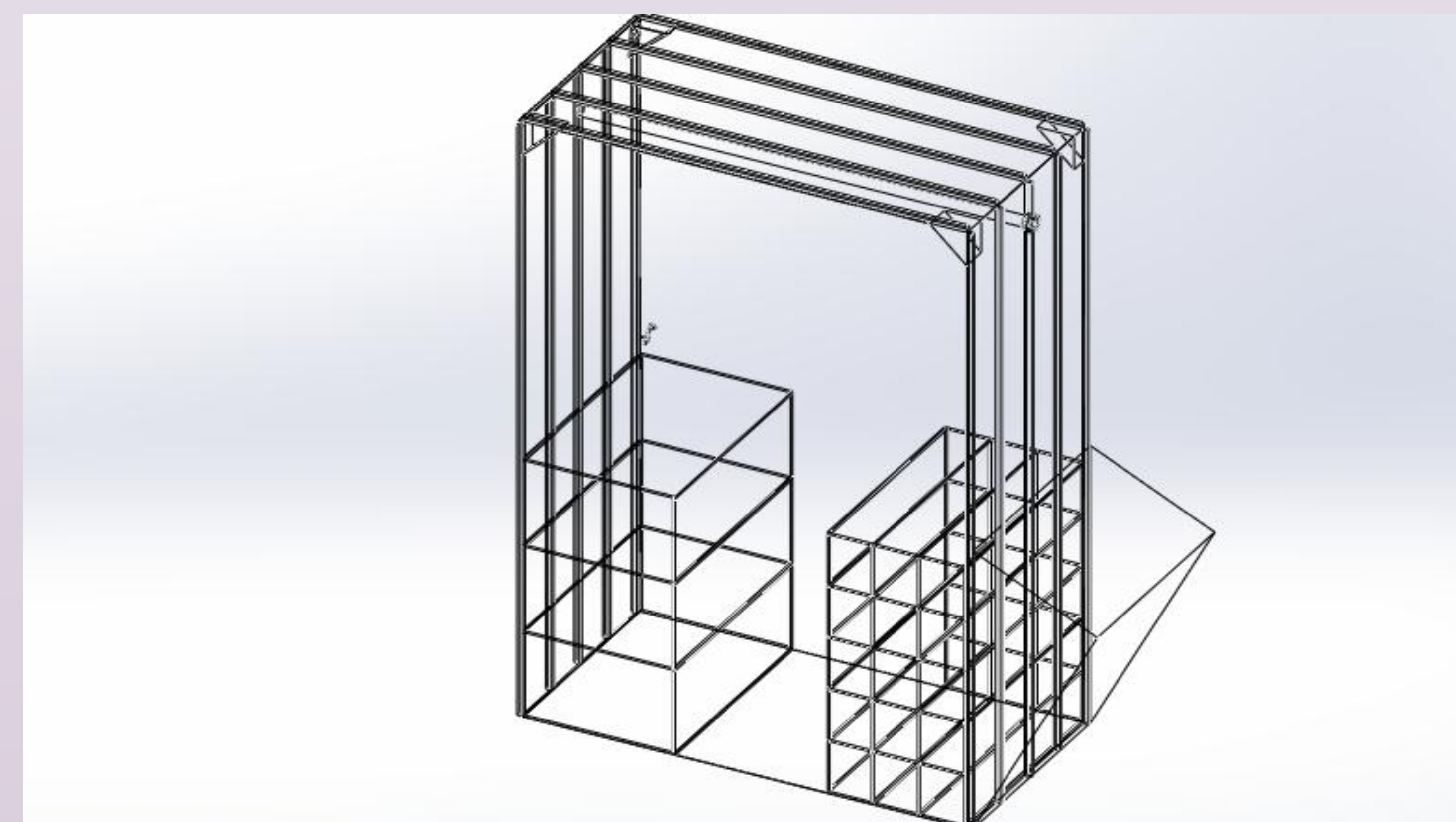
POSSIBLE SOLUTIONS

We invested a great deal of time designing the features of the Clear Closet to meet all of the project goals. The original material we chose, ABS plastic, was too toxic. We substituted PETG plastic to be more environmentally friendly. Unfortunately, this caused the cost per sheet to double.

The first thickness of the PETG that we looked at (3/8ths) was strong but too heavy. The initial stress test on the second, thinner PETG sheet (1/16ths) showed that it wasn't strong enough. Phil was able to add ribs into the design that were enough to meet the stress test without adding excessive weight.

We also considered multiple solutions to the layout of the closet. Much attention was given to the weight and size of the items a closet would typically hold. Each solution was sketched out by hand and then edited as needed.

FINAL SOLUTION
The Clear Closet

LESSONS LEARNED

There were many lessons learned as the concept for the Clear Closet was developed.

It is very useful to have or learn Solid Works skills.

Solid Works does not incorporate a variety of sustainable building materials.

Working effectively in a small group requires cooperation, communication and patience.

TAKE AWAYS

A new appreciation for the challenges our students face in learning new material.

Projects always take longer than you expect.

Working in a small group fosters the development of new ideas.