

AquaHarvest Rain Collector

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What is AquaHarvest?

The AquaHarvest was designed to be an affordable and sustainable tool used to combat widespread clean water shortages throughout the world.

The idea initially came from a 5-gallon water jug used in office coolers as shown in *figure 1*.

The idea was to make the design simple to allow for the ability of further developing the product (ie internal filtration systems, more compact design, etc.)



Figure 1: Example of 5-gallon jug office cooler

Prominent Design Features

The most prominent feature added was the funnel-shaped top to the Harvest, allowing for a wider range of collection.

Another significant feature added was the cone-shaped stake at the bottom of the design, meant to allow the harvest to be used in more severe conditions without being blown away.

Both of these features are indicated in *figure 2*.

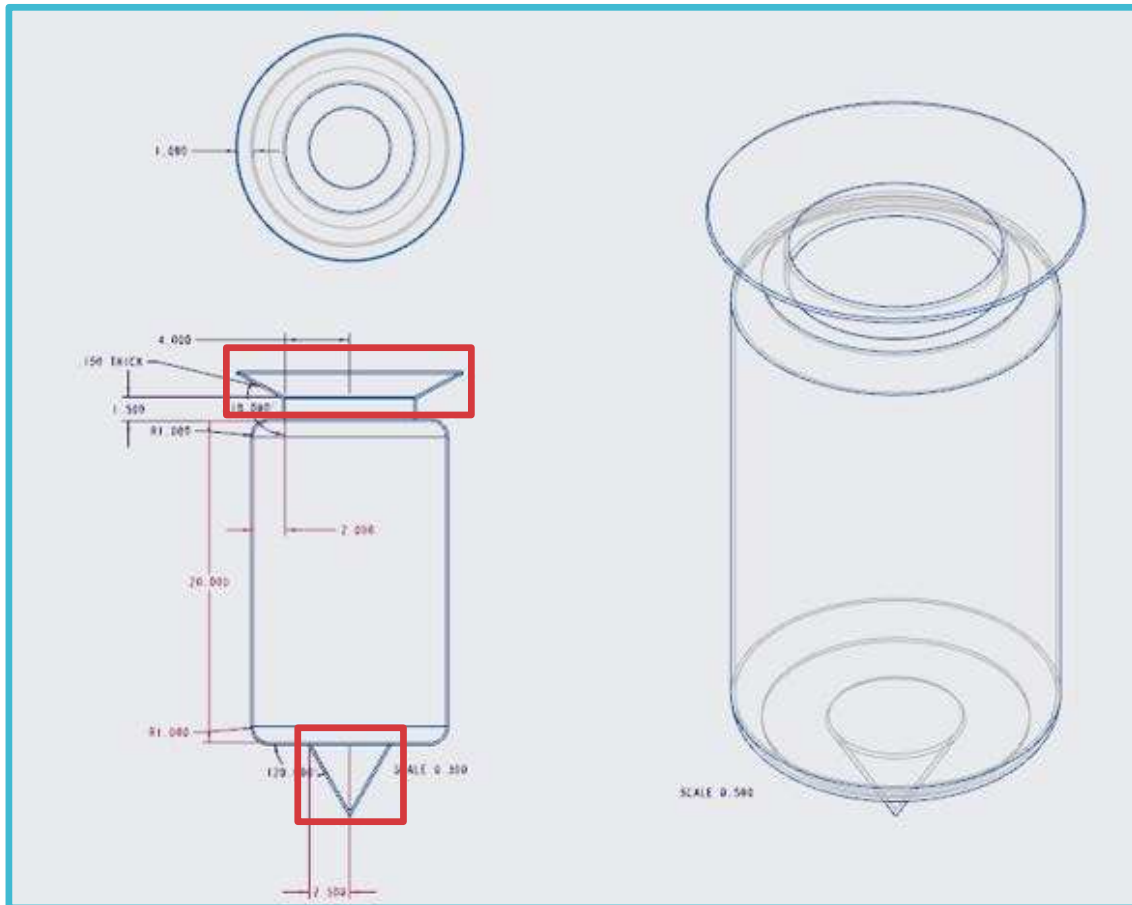


Figure 2: Drawing of the first iteration of the AquaHarvest

Why?

- Initially when being admitted into Behrend, I was planning on becoming a Nurse, as I always wanted to help people with my career.
- I eventually became a Plastics Engineer after learning of the medical plastics certificate.
- This contest, to me, served as a chance to express my creativity in a manner that could inspire the creation of a part used to help those in need.
- I was also inspired by the 2023 first place winning design of a refugee housing.
- Helping people is not just a passion of mine, but also a purpose.

Unexpected Challenges

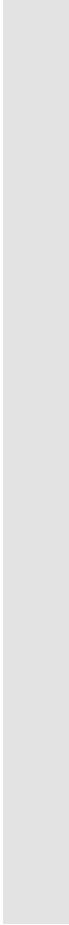
- The proportions of this design were easily the most challenging part, as I wanted to balance the utility of the product with its capability to be transported with relative ease even when filled with water.
- This was such a prevalent challenge as a substantial number of countries that struggle with providing clean drinking water also lack autonomous transportation, and was a large factor for me to consider.

Changes from Concept to Finished Product

- Initially the concept was much more complicated, including an internal filtration system, external dispensing system, as well as a more complex system for planting the device into the ground.
- These factors mostly changed as a way to both reduce cost and allow for more collaboration on improvements, which I believed to be more constructive and helpful on projects such as this.

Takeaways

- This submission was a phenomenal way for me to deepen my knowledge of blow molding and diversify my opportunities in this industry.
- This competition was a spectacular opportunity for me to further develop my own passion for my career.
- This product serves as a representation of why I continue to work in philanthropic ways both professionally and personally.



A Special Thank You

To the SPE for this opportunity!

Questions?