

March 31, 2015

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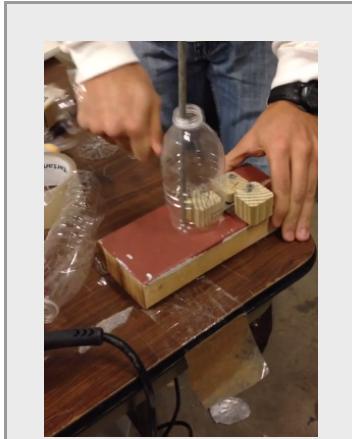
**ENGINEERS WITHOUT BORDERS-USA
CARNEGIE MELLON UNIVERSITY
STUDENT CHAPTER**

Project Spotlight: PET Thatch Roof Design

It's time for a good ol' project spotlight! This month, we're calling out the Roof Design team on the PET Thatch project. To get a better idea of what they are doing, David Sparks, the Vice President of Finance, and Yeshar Hadi, the Vice President of Public Relations, went down into the workspaces below Gesling Stadium to get a firsthand look at a critical facet of PET Thatch. There's no utility to a bunch of strips of plastic if there's no roof design that implements them!

After the Decountouring team turns the soda bottles into usable rectangular sheets of plastic, the Roof Design team goes to work. They begin by attaching each of the sheets together to form a larger array of plastic strips. These larger arrays are screwed down onto a wooden rectangular grid, and then weaved together using ribbons of plastic from smaller bottles, retrieved using the mechanism in the video below. Although this was not the original design, this is the first design that was built. The first iteration of the design was envisioned to be several smaller sheets of plastic draped on top of one another; however, it did not consistently provide a water-tight seal.

In the future, the team will test the roof by seeing how it fairs in a shower. The team is hopeful, but knows that they should be probably bring swimsuits. That's all for this month's spotlight, folks!



Click the above
image to see one
aspect of the roof
design process.

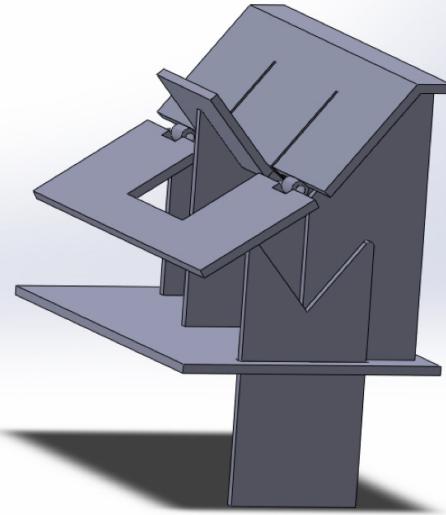
Project Updates



In order to see if Coffee Cherry wine making is something that is feasible for coffee growers to do for supplemental income, the Coffee group is trying their hands at it. In this picture, they're adding sugar to a mixture that will later become wine.



This is the current plastic attachment method that the Fusing group is trying to optimize and automate. The idea is to use larger sheets of plastic as the protective roof material and then to weave a thinner string of plastic through the sheets to hold them together.



The prototype and CAD model for the mechanism that will cut the tops and bottoms off of bottles, dispose of the ends, and then slide the center of the bottle onto a second strip cutting mechanism.



The tri-chapter effort between the Pittsburgh Professional, University of Pittsburgh, and Carnegie Mellon University chapters sent a travel team in March on their second assessment trip of Curingue, a rural area in the Ecuadorean Andes. They navigated and surveyed the steep terrain to plan out where to construct a water pumping system to provide the community with potable water. Back in the States, planning is also underway for another trip to implement two latrines in Tingo Pucará, a community near Curingue.



Schoolchildren in Nyadire, Zimbabwe, the location of our chapter's lighting project. The Nyadire mission complex provides education to about 2,000

children in Northeast Zimbabwe. Our chapter will travel to Nyadire in August for an assessment trip to gather information about starting a grid-independent lighting system.



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