Food and Water

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WINDCHILL REFRIGERATOR SYSTEM

WindChill Refrigerator System

- Problem:

  Food Preservation techniques is a major problem in Ghana's hot climate

- Objective:

  Build/Test/Problem solve a refrigeration system that doesn't require electricity

The Building Process…


WHAT A
SHOCK
ERNEST


WASTE MANA


WORKS DE
INFOR. SERV
WASTE MAN

Problems/Ideas for Improvement….

- Climate in Ghana is much different than where the unit was previously tested – (extreme heat)
- Need a better cooler
- Put cooler underground?
- Put coils deeper in ground? (right now they are 2 ½ feet underground)
- Build underneath shade tree?
- Build out in farm where it is windier?
- Find someone to bend pipes instead of weld – much cheaper!
- Use PVC pipe instead of metal pipe?

HOOPHOUSE

Reasons for the Hoophouse

- Agricultural yields are low due to lack of farming technologies
- Protects from rain, heavy winds, and insects
- Allows for growth of more delicate crops

The Building Process

Post-Travel Update- 20 days after planting

Criticisms/Suggestions for Improvement

- Not being watered everyday
  - *Evans is working on finding someone to water and maintain, will continue to follow up until found*
  - *Future groups could create an irrigation system*
- Wasn't introduced into the target location
  - *Potential next step for future trip, relocation or building another*
- No source of plastic tarping in Ghana
  - *Research other options or source from larger markets*
- Ran out of time to complete a composting project
- Not as efficient with the tools we had

RAINWATER COLLECTION

Rainwater Collection

- Collects/Stores
- Reduces Flooding
- Clean
- Close
- Saves Time

Itinerary

Plan

- Examine existing systems
- Explain system
- Choose area
- Attach gutters
- Compose barrel
- Build platform
- Connect gutters
  - *To each other*
  - *Insert bug screen*
  - *Attach first flush pipe*

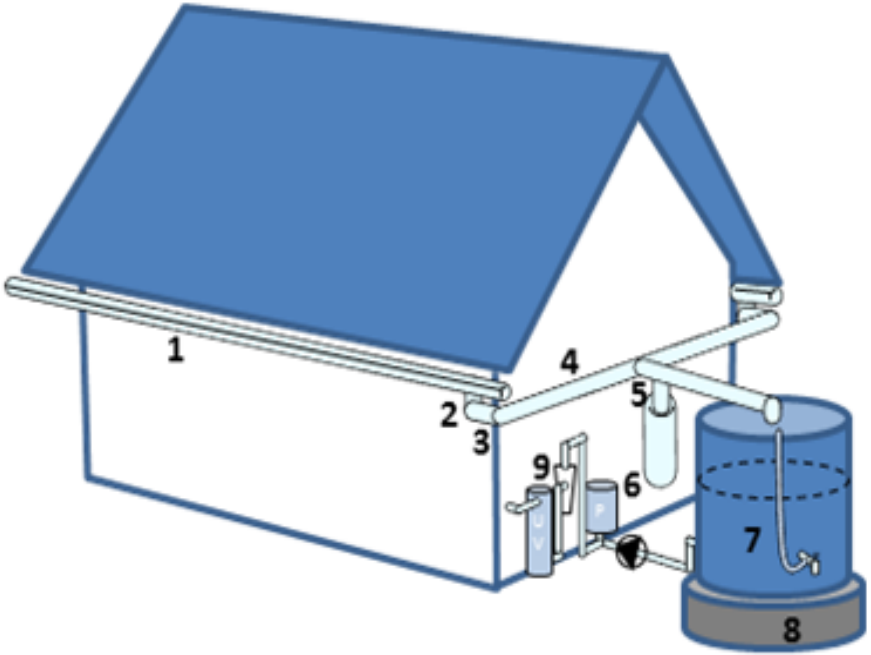
Reality

- Meeting with Augustine
- Get materials
- Be given area
- Decide which side of the house
- Create brackets
- Attach brackets
- Attach gutters
- Create bug screen
- Compose barrel
- Connect barrel

Materials

- PVC Pipe
- PVC Elbows
- PVC T-piece
- PVC Cement
- PVC End Caps
- Hacksaw
- Plastic Barrel
- Galvanized Sheet Metal
- Concrete Nails
- Hammer
- Tape Measurer

The System



The System

The System

Improvements

- Choose stronger material for gutters
- Make sure gutters can be connected to one another
- Make brackets out of stronger material
- Attach brackets to the gutters
- Increase downpipe length