

Rainwater Catchment

Project Objective:

We wanted to design a rainwater harvesting system to increase water security at AMI and to become a launching pad for future projects that implement rainwater harvesting.

Rainwater harvesting utilizes resources AMI has in abundance that we believe could reduce the load on spring and well water sources.

Design:

This project included designing and building:

- Roof catchment system off the bathhouse
- Small scale bucket irrigation in the Sol Patch
- Roof catchment system off the lodge

Materials and Cost:

Small Scale Bucket Irrigation

Bucket - 35\$

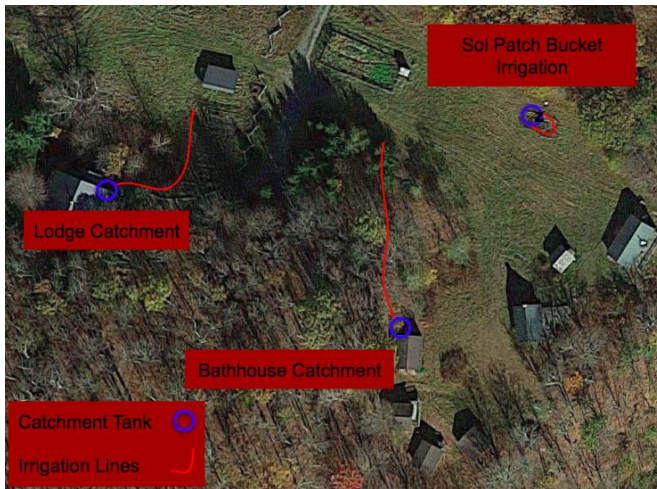
- 5 gal bucket
- 5/16 in brass hose barb
- 2 rubber washers
- 5/16 in vinyl tubing
- 1 Gasket top bibb
- 1 Hex bushing

Frame - 5-10\$

- 2x4 (dependent on design)
- screws

Bathroom Catchment

- 275 gal water tank
- Mesh screening
- 2x 4" PVC elbows
- 4" PVC pipe
- ~150ft irrigation tubing



Resources:

Info on Virginia tax credit

<http://www.ncsl.org/research/environment-and-natural-resources/rainwater-harvesting.aspx>

Virginia Rainwater Harvesting Manual

<https://www.radford.edu/content/dam/departments/administrative/Sustainability/Documents/Rainwater-Manual.pdf>

Bucket Irrigation

bucketirrigation.blogspot.com

Results:

Highland county receives 42 inches of rain on average per year. The bathhouse roof space collects 7,812 gallons of water based on the average rainfall.

$$300 \text{ ft}^2 \times .62 \times 42 = 7812 \text{ gallons}$$

To determine how much rainwater your roof can collect: **roof ft² x .62 x Avg rainfall in.**

