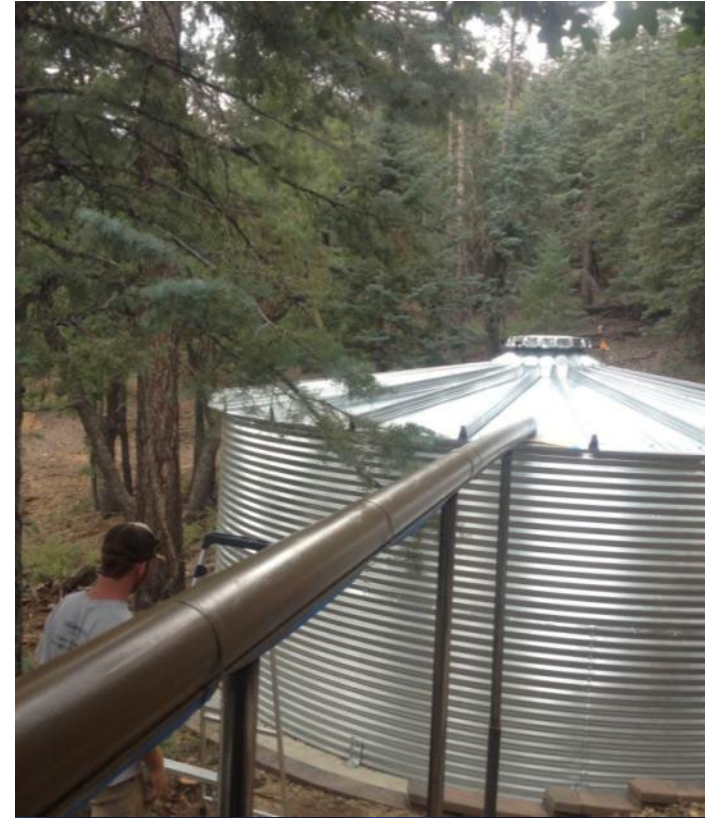




# *Refuge Retreat* Residential System

Fire suppression and landscape irrigation



SKYWATER®



t barnabas kane & associates  
ENVIRONMENTAL DESIGN®

# Refuge Retreat Residential System

## Project Overview

*Campus core integrated with rainwater harvesting*

- **Industry/Sector:** Residential
- **Client:** Private homeowners
- **Location:** Prescott, Arizona
- **Completion:** 2013
- **Description:** This remote, seasonal mountaintop home had a failing well, so we set up the rainwater collection system as the primary water source with the well as back up. Re-guttering and snow stops were required because of the alpine conditions and tree density. We consulted the local fire district prior to design and install. Owner also has a generator for power back-up for the pump.



# *Refuge Retreat Residential System*

## *Design Data*

- **Water use:** landscape irrigation, fire suppression
- **Annual average rainfall:** 16 in. (historically 18 in.)
- **Available roof area:** 1,250 sq. ft.
- **Roof material:** factory finished metal



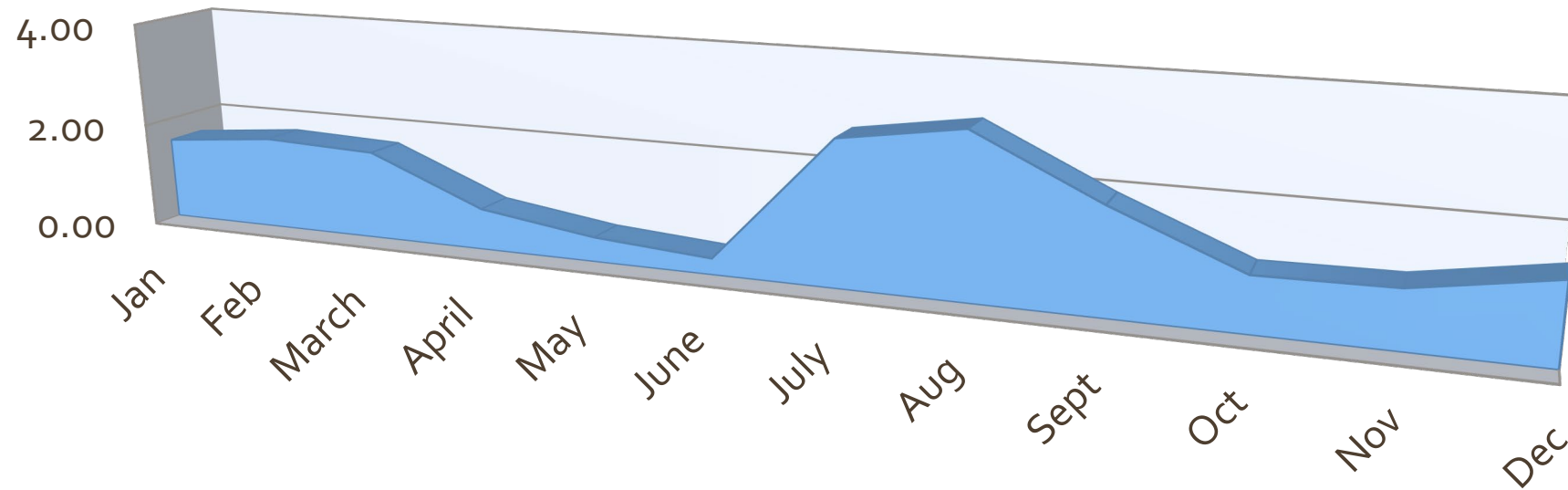
# *Refuge Retreat Residential System*

## *Rainwater System*

- **Storage:** 13,000 gal. (4,000 gal. devoted for fire protection)
- **System:** CorGal lined stainless steel tank, existing booster in pump house; filtration; 4-in. fire connection
- **Filtration:** Pre-Filtration: two Rain Harvesting PVC rainheads. Post Filtration: 0.5 Micron filter, Carbon block, UV
- **Pump:** Existing booster in pumphouse
- **Roof and surface conveyance:** wet
- **Irrigation:** gravity
- **Overflow:** landscape



# *Refuge Retreat Residential System Average Annual Precipitation (in.)*













# *Refuge Retreat Residential System* *Team*

- **Designer:** TBK Environmental Design
- **Installer:** Skywater, High Desert Permaculture





# Skywater

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