Rainwater Harvesting Worksheet

Rainwater Harvesting: Collecting _____ from the roof of a house or other _____ surfaces and directing it for _____ use.

Principles of Rainwater Harvesting:

1. Begin with long and thoughtful _____.
2. Start at the top of your _____ and work your way down.
3. Start _____ and simple.
4. Plant the _____.
5. Always plan for an _____ route.
6. Maximize living and organic _____.
7. Maximize the benefits and _____ of every feature.
8. Continually _____ your system.

Water Harvesting Techniques:

_____ *techniques* direct water right into the soil for immediate beneficial use. Incorporate passive techniques whenever possible because they provide the most potential for water harvesting, especially when paired with desert-friendly, low-water-use, and native plants.

_____ *techniques* direct water into a storage container for later use. They require taking action before water can be beneficially used, but they can be used during dry spells to support edibles.

Passive Water Harvesting Techniques	Active Water Harvesting Techniques
	Tanks Cisterns Barrels

Creating an Integrated Design Plan

- Consider the zones of your yard when planning any element.
- Orient your home to the sun throughout the year and through the day.
    - Winter: let the sun in from the south side.
    - Summer: shade the northeast and northwest side.
- Use the orientation of the sun, wind patterns, and other elements to your site plan to influence your design plan.

Calculating Your Home's Rain Income

What is your rain "income"?

- What is Phoenix's average annual precipitation in inches? _____
- What is the area of land on your property? _____
- What is the area of your roofs, garage, sheds, patios, driveways, and other catchment surfaces on your property?

Catchment Surface	**Area**
Roof	

Runoff from Roof Per Year and Per Storm Event: Catchment area (ft2) X rainfall (ft) x 7.48 gal/ft3 = maximum runoff (gal)

Rainfall Conversion from Inches to Ft.	
8 inches of rainfall in Phoenix (per year)	.69 ft
1-inch rain	.08 ft
2-inch rain	.16 ft
½-inch rain	.04 ft
3-inch rain	.25 ft

Calculating Basin Volume: Average Surface Area (ft2) x Average depth (ft) X 7.48 (gal/ft3) = volume (gallons)

Resources

- Watershed Management Group
- Water – Use It Wisely Rainwater Harvesting Page
- *Rainwater Harvesting for Drylands and Beyond (Volume 1 and 2)* by Brad Lancaster
- University of Arizona Cooperative Extension Publications
- Maricopa County Assessor's Office Parcel Viewer
- Landscape Plants for the Arizona Desert
- Videos shown:
    - Capture the Rain and Rebuild the Economy
    - Water: What You Pay For
    - Glendale demonstration
    - Glendale Rain Event
    - Rain Garden at Community Center North
    - Lisa Shipek's Rain Event