

Use Roof Runoff for a Domestic Water Supply

By Daniel Howell

Since we live away from cities and "conveniences," one of the questions most frequently asked us is "Where do you get your drinking water?" I simply raise one finger skyward and reply "Rain!"

All of our drinking and household water is obtained from roof catchments. Our needs (for two people) are met by a 20' x 20' roof of 400 square feet. This yields 3750 gallons a year from 15" annual precipitation. Our system is simply a galvanized roof catchment, gutters and a storage tank (filtration optional). We angle our roofs and place the tanks on the south side so that winter temperatures will not freeze the system. A buried cistern is ideal. Minimum size should hold a two-month supply, but the larger the better. We have a 6-month capacity. In a recent design course, Bill Mollison suggested suspending a bag of marble chips in

the storage tank to counteract the effects of acid rain. The resultant higher Ph (hard water) will bind up minerals for safer drinking and cooking, though you'll still want to use straight rain (soft water) for washing and other functions.

We have also cut our usage to less than 5 gallons per day per person, largely by eliminating indoor plumbing (sink drains excepted), recycling greywater, and using set amounts for various chores like laundry, bathing, and washing dishes.

Through our chosen rationing of this finite resource we have a more than adequate supply without the expense of a well or the ecological consequences of rampant water waste. In drylands, such solutions must be used to curb our consumption and stretch resources.

Usage chart: (gallons per day per person)
 100 - very heavy, 75 - heavy, 60 - normal, 45 - moderately conservative, 30 - very conservative, 5 - runoff farmstyle

Formula for rooftop water potential:

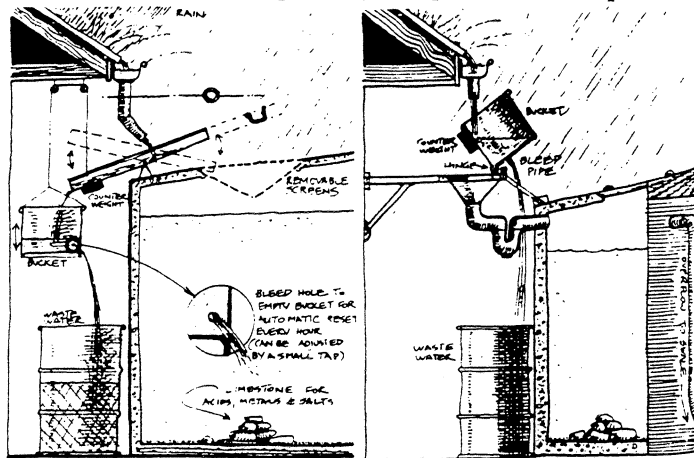
$$\text{Rooftop water in gallons} = \frac{\text{Rooftop Area (sq. feet)} \times \text{Annual Rainfall (inches)}}{1.6}$$

Suggested readings:

Home Water Supply by Stewart Campbell, Garden Way Publications
 Five Acres and Independence by M.G. Kains, Dover Books

Editor's Note: Many of our homes have rooftops larger than the 400 square feet described, which could yield us a water supply far exceeding what the author uses.

If anyone has advice on purchasing cisterns or tanks, we'd like to hear from you. We know that many more of us are ready to radically decrease our use of pumped water.



Diagrams from Permaculture: A Designer' Manual

CLTs continued

businesses that could not be funded by banks. A Santa Fe, New Mexico, group known as CEED Institute plans to establish financial and building coops and businesses, all within the context of Permacultural design and ethics.

Not all governments need prodding. The Jewish Nation Fund is a land trust owning most of the State of Israel; and several Scandinavian countries have been experimenting with a form of cluster housing (incorporating passive solar principles) known as Cohousing. (The combination of social and ecological concerns found in Cohousing deserves adoption on a wider scale here in America.)

...Confrontational thinking, operating through political or power systems, has destroyed cultural, intellectual, and material resources.... We need to [replace] power-centered politics and political hierarchies with a more flexible, practical, and information-centered system responsive to

research and feedback, and with long-term goals of stability. And we need to do this in an ethical and non-threatening way, so that the transition to a cooperative (versus conflicting) global society is creative (not destructive).

-- Bill Mollison

Community Land Trusts are as diverse as the people and circumstances that create them. This structural openness, combining the need for affordable housing and the desire of many to return to a land ethic promoting healing of our Earth Mother, has brought about an "explosion" of CLT formation. Chuck Matthei, current director of the Institute for Community Economics, reports more CLT activity in the last two years than in the previous twenty. With work, we can look forward to a time when a community land trust will be established in every community.

Tim Spears is actively involved in permaculture and is working to establish a regional CLT in southern Arizona, the "Earth Trust" (see issue #5). In the future Tim hopes to set up a revolving loan fund for permaculture and Land Trust projects.