

Intro to Permaculture High Desert Microclimate Development Video Transcript

If you are away from the equator, to the North or South of it, then designing for the solar microclimate in winter has many benefits. This was my backyard when I lived in Prescott, Arizona. Prescott is at 35 degrees North latitude at an elevation of 5300 feet or 1600 meters. I had two houses and we took down the back fences between them to adjoin the yards. In this photo, I am standing on the roof of the house looking into the backyard.

The temperature swings between night and day are extreme in the high desert, without much cloud cover to hold in the heat at night. A fluctuation of 50 degrees Fahrenheit or 28 degrees Celsius is not unheard of between night and day. Orienting a design to absorb the sun's heat can help to buffer that huge temperature swing.

The basic structure of this design is a South-facing courtyard to absorb the sun's rays. This courtyard is outlined by the house, rainwater harvesting tanks, chicken coop, and earthen shed. When the sun is low in the winter sky, the thermal mass of the structures soaks up the heat. Especially the 3000 gallons or over 11,000 litres of rainwater from the roof stored in the green tanks.

The positioning of the buildings and tanks creates a warm microclimate within the courtyard that has a moderated temperature. I had friends across the road who had their vegetable garden out in an open field away from any structures. My garden was frost free an average of about 3 weeks before theirs in Spring, and about 3 weeks after theirs froze in Fall, giving me a whopping 6 weeks longer of frost free garden production! Behold the power of microclimate development!