

## Successful Urban Permaculture Patterns and Strategies

Zev Friedman, Organic Growers School, March 2016

[livingsystemdesign.net](http://livingsystemdesign.net), [schoolofintegratedliving.org](http://schoolofintegratedliving.org), [permacultureinaction.com](http://permacultureinaction.com)

**The big picture:** Many cities at this historical moment have grown to be concentrated population centers that are unsustainably large in our dwindling fossil-fuel era. Since WWII, cheap fossil fuels have enabled a tiny rural farming population to grow and transport food and other essentials for concentrated urban centers, via the use of massive industrial machinery and chemical methods whose sunsets are now visible. These cities have insecure food supplies, they're hot and polluted in the summer, cold and vulnerable in the winter, and they propagate systemic economic and racial fissures which provide luxurious consumption and access to land and resources to some groups while barely keeping other groups alive. These challenges are inter-connected. We need to create pathways for some portion of urban dwellers to re-locate and develop vibrant farming villages and towns which re-inhabit the abandoned American landscape and create a new rural culture based in small-scale agro-ecological farming practices. Applied systematically, these "carbon farming" practices can reverse soil erosion, sequester carbon, help us adapt to climate chaos, preserve and enhance biodiversity, and create millions of jobs.

At the same time, if we can get a handle on our own creation, cities can flower as beautiful convergences of culture and emergent human endeavor, and they will continue to exist barring absolute economic collapse. New ideas can take off quickly in cities because those ideas are so visible to so many and innovation is hip. Many impoverished and oppressed groups are concentrated in cities and bear the brunt of environmental toxicity, racism and economic disparity, and these groups and their allies can use the eco-mimicry insights of permaculture to empower their communities. Cities already constitute tightly managed landscapes which currently squander fossil fuels and chemical products to maintain purely aesthetic landscapes, so in many cases the transition to permaculture is simply a transfer of maintenance energy instead of an addition of maintenance energy. Finally, we have many historical and some current examples of cities designed for community gathering, passive solar heating and cooling, human comfort and health, wise water stewardship, and food production. Permaculture design offers many strategies for re-shaping our cities towards this kind of vision.

### A. Overall patterns:

- 1) Think of your city or town as one large ecosystem or one large organism, with neighborhoods as organs and individual properties as cells. Your property can't fill all functions. What are some appropriate functions for your property, given its size, location, vegetation and other assets/challenges within the greater urban context? For instance, if you have a property covered in giant white oak trees, maybe you can be the acorn, mushroom, duck and honeybee gardener, and trade your shiitakes and duck egg/acorn/honey cookies to your neighbor with the sunny yard for okra, tomatoes, mulberries and winter kale.
- 2) Neighborhood scale co-ops: see below, poultry co-ops, electrical co-ops, orchard co-ops and cascading rainwater co-ops.
- 3) Climate change, pest and disease migration, and climate adaptation- learn about the likely implications of climate change and related plant pest and disease migrations in your area, and speak with seasoned gardeners about the trends they perceive in seasonal rainfall and weather patterns, so you can design for what is coming, not just what exists now.

- 4) Pollution, toxicity, flooding and stormwater- due to their extremely intensive use, soils and waterways are likely to have been impacted negatively by car exhaust, toxic chemical use and industrial processes, household chemicals and building materials. Many of these impacts are not directly perceivable by our senses and require lab testing to diagnose. You don't want to spend 10 years developing an urban permaculture paradise only to discover that your soil has 20x EPA allowable lead levels due to an old burned-down house with lead paint. Research your site history and zoom out your awareness of the flow of air, water and chemicals around you.

## **B. Cultural and Collaborative Strategies**

- 1) If you want to work with someone else, or help some person or group, first ask questions, listen actively, and carefully integrate their needs into your ideas before advocating for your own strategies.
- 2) Neighborhood scale collaboration and rotating work parties.
- 3) Rapid assessment design classes- hire an experienced permaculture designer to walk multiple properties in your neighborhood with a group of homeowners, generating a fabric of interconnected, practical design ideas and a learning program for everyone involved.
- 4) Collaborative poultry co-ops- use adjacent properties to create more integrated and foragable poultry systems and have shared work responsibilities.
- 5) Neighborhood micro-grid co-ops- make solar power more affordable and reliable by co-operating to find the best neighborhood spots for solar arrays and then setting up battery systems and pyrolytic electrical generators as backups for those systems which also create biochar.
- 6) Cascading rainwater co-ops- neighbors uphill provide rainwater for neighbors downhill so everyone gets higher water pressure. Property at the crest of the hill farms prickly pear cactus and other low water crops.
- 7) Forest gardening and orcharding co-ops- open up shared backyards to create a large unified forest garden with more species, niches, gathering spaces and pathways.
- 8) Backyard elf lodging- build a sweet little living structure/toolshed in your backyard with an outdoor kitchen and offer low-rent lodging for a young person with permaculture skills/interest to stay there and help implement/maintain your system.

## **C. Buildings, energy and water strategies**

- 1) Most cost effective approach to energy efficiency is sealing doors, windows and other leaks and insuring good non-toxic insulation in roof and floors. Then go to considering clean burning wood stoves for heating and possibly for cooking, as well as solar electricity and hot water.
- 2) Passive solar warm-houses (for seed starting and winter greens production) adjacent to buildings on S/SE side, adjacent to house windows and surrounding heat pumps, to create winter heating; in summer the planting counter converts to outdoor kitchen counter.
- 3) Passive solar cooling of buildings and driveways via shade trees and vigorous overhead vining arbors (hardy kiwi, schisandra, muscadine, hops, passionflower, vigorous pole bean varieties)

4) Use living fences instead of purchased constructed fences, for shadier, lower maintenance edges and for multiple yields.

5) Infiltration pits and direct water guttering- use this free techniques to catch and store rainwater from your roof instead of or above and beyond rainwater cistern capacity.

6) Ponds: have at least one sunny pond and one shady pond in a given area, as they serve much different functions. Use contoured swale ponds to catch and store rainwater on steeper slopes. A pond smaller than 500 gallons usually won't support fish without intensive pumped aeration.

#### **D. Some Planting, Fungi, and Animal Strategies**

1) Roadside guild of usefuls plants for basketry, fencing materials, charcoal production and other non-edible uses

2) Perennial greens- sochan, nettle, chickweed instead of spring greens

3) Mushroom gardening (shiitake, oyster, stropharia, reishi, turkeytail, blewitts, maitake, lion's mane) to avoid cutting specimen trees to create sun space.

4) Indoor mushroom gardening (oyster mushrooms on used coffee grounds in used egg cartons, etc.)

5) Black soldier fly larvae systems to eat food scraps and animal manure and generate larvae for poultry and fish feed

6) Mulch row edges (comfrey, elecampagne, sochan, red clover) to delineate intensive annual gardens and limit weed/rhizomatous grass expansion

7) Myco-filtration using stropharia and oyster species to remediate petroleum runoff and animal manure runoff.

8) Bamboo/black locust guilds in rhizome barrier for growing fence materials

9) Intensive tree pruning styles- coppice, pollard, espalier