Urban Agriculture in Japan

5 Typologies and their relative benefits

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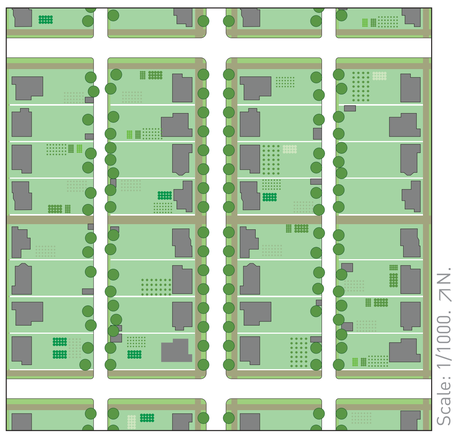
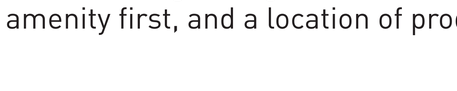
Goal: To integrate agriculture with the urban form as a community amenity first, and a location of production second.

Benefits of urban agriculture:

- A productive landscape: Inputs yield outputs with physical and ecological benefits
- Reduced transportation costs and emissions
- Reduced end price
- Increased in-season food availability
- Connection with the seasons and the systems that sustain us
- Educational opportunities
- Health benefits: Better diet with fresh food, open space for exercise, Gardening as exercise, and stress reduction from connection to nature
- Increased habitat for wild species
- Reduction of urban heat island
- Increased community connection and involvement





Productive Yards

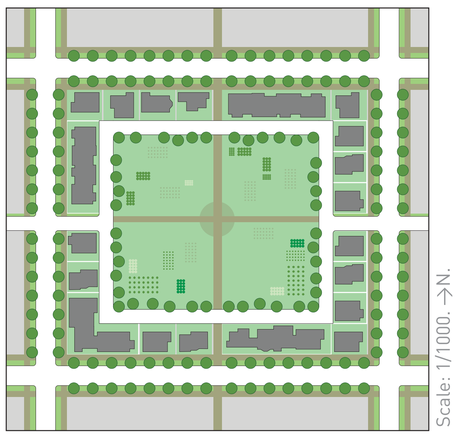
Definition: These yards may vary in size, but essentially function as an allotment in your back yard. They are 250m^2, which is large enough to have a substantial yield, but small enough to farm in your time off.

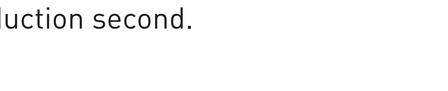
These particular yards are designed with a back entrance, so someone else can farm them if you don't want to.

Pros: If it's your yard, you can generally do what you like with it. Yards can accommodate significant production, and can be incorporated into a community gardening system or CSA.

Cons: Often disconnected from community and underutilized. Generally require caretaking by the owner.

Best Usage: Yards are fun but may require a lot of maintenance and encourage wasteful landscaping. Not good for very dense areas.





Community Garden

Definition: These are gardens in which each member has a private space for personal use, and frequently access to shared space as well.

In this case, lots around the house are small, as is common in Japan, but houses are built around a community garden to which owners would have access.

Pros: May use vacant space, beautifies area, provides community focus and open space as we as room to grow a few crops. Good health benefits.

Cons: Variable, generally not very high, production. May be messy in the winter. May not be able to admit as many people as want space.

Best Usage: Great for empty city lots, good neighborhood amenities, not for high production.

Allotments

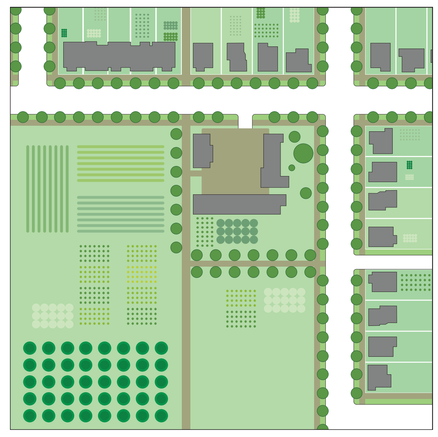
Definition: Allotments are like Community Gardens, wherein each member has a personal space to garden, but allotments tend to be larger (around 250m^2) and are often located on the edge of town.

These allotments are located in a transition zone between neighborhood and forest, and offer shared community space as well.

Pros: Large enough to accommodate significant personal production, provide all the health and economic benefits of a private garden, with community access.

Cons: May be rather far from city center, production is for personal use only.

Best Usage: Good for larger-scale personal production. Significant amounts of food may be grown.



Urban Farm/CSA

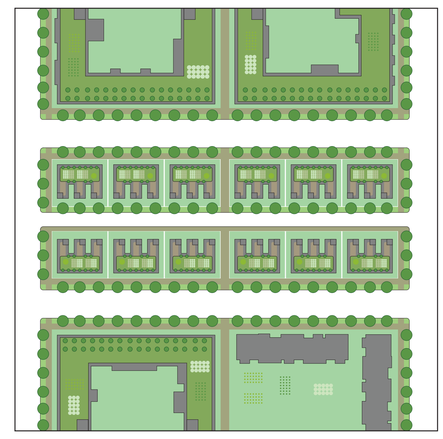
Definition: Urban farms are precisely that: farms in the city. They may be varying sizes, from half a block to much larger. The farmers may farm neighboring yards as well as the main farm if they are available.

This urban farm is designed to be a community asset with public access, connections to the transportation grid, and a community center/farmyard facing the neighborhood.

Pros: Provides food for community, reduces food miles and transport costs, provides employment, possible open space, community, and education. May be run for profit.

Cons: Not large enough for large machinery, space hard to find.

Best Usage: Many. Areas that will benefit from this asset and have room for it and people to run it.



Intensive Green Roof

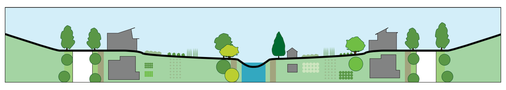
Definition: Intensive green roofs are those with soil depths that can accommodate larger plants, and even small trees.

These greenroofs are designed as productive amenities for the people who live or work below them.

Pros: Provides thermal insulation, handy food, pleasant environment, education, visual asset, may simply raise topsoil up when building a new structure.

Cons: Resource intensive to build and maintain. Often don't permit public access.

Best Usage: Strategic applications, not to be installed everywhere.



By The Numbers

Agriculture is hard to pin down, particularly as we're looking mostly community farming. Jane grows potatoes better than Bob, Joe grows only organic, Javier has a lot of other work to do, and Bobby Ray grows flowers. What are you going to do? I have decided that the point is that people have the OPPORTUNITY to dig in the dirt and supplement their diets that way, not to figure out precise yields. The grocery store is going to disappear, and people shouldn't necessarily grow all their own food in their back yard this close to Tokyo. Urban farms are another matter, and again, everything depends on method and the particular farmer. That said, there are some useful guidelines available, which occasionally differ from one another:

* Japanese people eat 158 kg of fruit and veg per year, on average.

* A typical British allotment is 250 meters square- that's a pretty big yard, and that's how big the single family house yards and allotments are in the typologies above. It's big enough to grow a lot of stuff, but it won't take up all your time.

* 1 person can farm 500 meters square alone, but that's full-time, and produces food for market.

* In Cuba, they can grow 8-20 kilograms of food per meter squared per year, using organic intensive farming methods.

* All lots should be accessible to potential community farmers in case of owner disinterest.

* Bio-Intensive methods can provide a full diet to 20 people per hectare (That's 900 hectares for 18,000 people).

* Producing only fruit and veg for 18,000 people requires only 36 hectares (people eat a lot of meat, meat eats a lot of veg).

* Bio-intensive farming requires "double-digging" planting beds to a depth of 24 inches. That means turning all that soil over. Not of the faint of limb.

* Do-Nothing Farming, also known as Natural Farming, the Fukuoka Method, is an alternative farming method to chemical or traditional farming. Developed for 30 years by Masanobu Fukuoka of Japan, this method includes the use of crop rotation, minimal irrigation, no or reduced tillage, "seed balls," and allowing natural regulation of pests.

Productive Yards

Community Gardens

* The National Gardening Association estimated that a $70 investment would yield $500 in produce. U.S. Department of Agriculture yield estimates are even higher: Each $100 spent produces $1,000 to $1,700 worth of food.

1. Japan imports 60% of its food.
2. Japanese food expenditures: 18% of income
3. Rice represents 55% of Japanese produce, bult 18% of food profits.
4. Japan is 90% self-sufficient in rice.

* Carbon footprint of food consumed per year (Netherlands- expect higher for Japan because of greater food imports) = 2800 kg

* Carbon footprint of heating, cooling, cooking, hot water in new 4 person house per year (UK) = 2600 kg

In 2008, the number of people growing vegetables increased 10 percent over previous years. The National Gardening Association (NGA) anticipates that number will increase by 20 percent in 2009.

The National Gardening Association says a well-maintained food garden yields about 1/2 pound of produce per square foot of garden area over the course of the growing season, worth about $2 per pound. That means the average-size garden - 600 square feet (56 square meters)- can produce 300 pounds of produce worth $600. Minus the $70 most people spend on their garden each year, consumers can typically net $530 in food savings. Multiplied by the number of food gardeners in the country (36 million households), NGA estimates that American food gardeners are producing more than 21.6 billion dollars of produce a year.