Modern Permaculture

Between The Plate And The Planet

Design Thesis
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In the United States today, are there concerns with the way food is grown, prepared, and eaten?

Yes
Industrial agribusiness farming

Unsustainable – Will not be able to sustain life for future generations

• Pollution (chemicals – pesticides, herbicides, synthetic fertilizer, etc.. odor pollution-manure, transportation of food (use of fossil fuels))
• Exploiting natural resources
• Soil erosion
• Irrigation use
• Destroying the ecological balance of the area
• Reduction of biodiversity (monocultures)
• Unhealthy food
Site

Madeline Island, WI
Design Inspiration
Design Process
A fresh start:

Going down the right road

I think..
What kind of farm is this?
• An effort to capture the nutrients produced by the animal and put it back to feed the soil that would then more effectively capture solar energy and produce biomass in the form of grass.

• Farmers who succeed as grass-based livestock producers and as organic growers market directly to people who care about where their food was produced, how it was produced, and who produced it. These farmers build relationships of trust, integrity, honesty, and dependability with their customers.

• The animals grow in a very intricate symbiotic system, such that every animal is contributing to an eco-system service.

• Small farmers need research and technology that will enhance their human capacity to manage things – to understand, to think, to learn to integrate things more effectively.

• Biodynamic farming regards an organic farm as a living system, as an organism whose health and productivity depends on healthy relationships among its ecological, social, economic, and spiritual dimensions. “A farm is healthy only as much as it becomes an organism in itself – an individualized, diverse ecosystem guided by the farmer, standing in living interaction with the larger ecological, social, economic, and spiritual realities of which it is part” – Rudolph Steiner

• This natural model heals the land, thickens the forage, reduces weeds, stimulates earthworms, reduces pathogens, and increases nutritional qualities in the meat.
Compared farming practices

Industrial Farming
- Industrial
- Annual species
- Monoculture
- Fossil energy
- Global market
- Specialized
- Mechanical
- Imported fertility

Sustainable Farming
- Pastoral
- Perennial species
- Polyculture
- Solar energy
- Local market
- Diversified
- Biological
- Local fertility
Physical Environment

Farming system and practices

Socio-economic context

Plant-animal community interaction and diversity

Mulch/residues, Crop rotations

Organic matter inputs

Beneficial biota, pollinators, predators, soil organisms

Livestock

Soil moisture

Controlling Pest and Diseases

Provide nutrients

Provide water

Enhanced Productivity

Modify soil structure
Examples of animals and nature working together:

Cow + Hen
Mimicking the moving, mobbing, and mowing of herbivorous herds in nature

Portable electric fencing
Salad buffet beef

The salad buffet example – white clover, orchard grass, timothy, blue grass, red clover, ground ivy or violet, wide leaf plantain, dandelion, narrow leaf, queen anne's lace grass.
Grass + Cow
Grass + Cow = Dung
Grass + Cow = Dung
+ Hen
Grass + Cow = Dung
+ Hen = more Grass
Conventional Chickmobile
Shademobile
Cow + Pig
Cow + Hay = Dung + Mulch + Corn = Anaerobic fermented bedding
Pig + Anaerobic fermented bedding = Fresh aerobic compost = More Grass
Other examples of animals and nature working together:

- forest + pigs
- rabbits + hens
- Turkey + garden
The ponds
• Gravity feed water systems for the animals and farm.
• The aquatic environment fosters biodiversity.
• The greater the variety of plants and animals the greater the stability.
• Ponds encourage frogs and toads which are great insect predators.
• Birds that eat bugs are drawn to the ponds.
• Cattails and other hydrological plants filter out toxins from surface runoffs.
• Cooler in the summer and warmer in the winter. Water protection.
The Garden (four seasons)

• Planting starts in August and throughout the fall so that salad greens and root crops can grow tall enough before the “big stunt” arrives – During the deep winter interim, the crops remain fresh in the ground, they’re just no longer adding bulk.

• Chill resistant varieties for winter harvest survival are spinach, chard, carrots, sorrel, turn kale, and scallions, arugula, claytonia, minutina, tatsoi, mache.

• For cold protection – cover the crops with remay cloth when necessary. Remay cloth is a white, gauzy synthetic fabric. It will be drapes over custom made wickets about 6 inches above the beds.

• The combined plastic and fabric climate modifications provide a low-cost input passage to an entirely new way of farming. This climate modification will create growing conditions similar to coastal Georgia.

• It’s configured on tracks and hitched to a tractor and moved like a giant sled to cover an adjacent field. That way a field that was planted in late summer can get its start outside and later be protected for winter production. In the meantime heat-loving crops can be grown in the greenhouse throughout the summer, and the uncovered plots can be kept in rotation with nutrient-fixing crops.
Grass!
Locavore architecture
Haybarn
Pig shelter
Hens and Rabbits
Milking parlour
cow barn
Haybarn
Each year

– 20,000 pounds of beef, 12,000 pounds pork, 1500 broilers, 300 turkeys, 300 rabbits, 17,000 dozen eggs.

....and the land will be better than it was before.

The end