Growing Power Urban Farm – 5500 W. Silver Springs Dr., Milwaukee
24 March 2012 Field Trip Notes by Maria Cancilla, SUST 350

Amy was our tour guide.

This location started out as a roadside produce stand – selling some of the produce Will Allen was growing himself on some family land he inherited. The land was purchased in 1993 and the organization was founded in 1995.

Next door is the future site of a 5-story vertical farm building that will have workshop and food processing areas as well as vertical growing. A capital campaign is underway.

They started growing on this site, and getting curious neighborhood kids involved – showing what they were doing and teaching the kids how to farm.

The staff is growing! A year and a half ago there were 30 people. Now there are 100 on staff in Milwaukee and Chicago.

Solar Panels on the roof offset energy costs.

Growing Power's small store on site has a "Market Basket" offering that helps to meet the food needs of the community. The nearest grocery store is about 3 miles down the road, so you need a car to get there. This location allows members of the community to walk over and buy some fresh produce – what's grown on the farm as well as fresh fruit like bananas that make it a more complete offering.

Green House #1
Micro Greens Area – Pea Shoots, Radish, Cabbage and Broccoli micro green mix. Also growing Wheat Grass and herbs like rosemary and lavender.

- 250-300 Trays are started and harvested daily.
- 1 Week from seed to harvest.
- Everything here starts with their 4-acre composting pit that is the start of the soil. Many places donate food waste, but Lake Front Brewery is a large contributor with their beer mash.

Green House #2
Hydroponic/Aquaponic

- Tilapia are growing in warm murky water – the run is 80 feet long. Closed-loop system – the waste is filtered out and the valuable nitrates/nitrites are taken up by the plants growing directly above the fish.
- They get the fish from New Mexico.
- Most of the tilapia are sold to area restaurants and caterers.
- It takes 12 months to harvest the tilapia.

- Geothermal water mass helps to heat the building.
- Third tier grows tomato transplants.
- Also starting peppers and tomatoes here.

Green House #3
Compost area/Demo area – How soil is made and 2 Food Processing areas.

- Compost gets its nitrogen from food waste and its carbon from cardboard and donated woodchips.
- The large piles are monitored for temp. to make sure that weeds and pathogens are killed off.
- Worms – Red wigglers, earthworms and other breeds are added to compost.
- The mixture of compost and worms is layered lasagna style – it is left for 4 months.
- They remove the worms when its time by placing a screen on top with banana peels and coffee grounds. The worms come up through the screen for the fresh food – they get about 80% of the worms this way.
- The 2 food processing areas are here. They have the washing and packing areas as well as the commercial salad spinning/drying machine for the greens.
- They also make worm tea here with worm castings – feeds the plants.
- We saw the coconut byproduct – coyer that is added to the worm castings to make the nutrient rich soil.
- Overhead there were baskets with mushrooms growing.
- Hydroponic system in this building runs on solar power.
- They recently installed 2 kinds of lights here, too – Metal Halide and High Sodium.

Green House # 4
We talked about the many workshops at the farm: Hoophouse Building, Hydroponic, Mushroom Growing, Community Agriculture Projects, Composting, Solar Power/Renewable Energy and Urban Bee-Keeping. People come from all over the world for this hands-on learning experience.

- More Tilapia – this tank has a sump-pump.
- Oak logs hang over the fish to grow mushrooms in this moist environment.
- On top tier, Nasturtium (edible flowers and leaves), endive and watercress are growing.
- Also a Black Pacu – native to the Amazon. This vegetarian fish has a strong jaw – you can feed it whole walnuts and its sharp teeth and strong jaw can crack the shell.
- The Pacu were a donation and are about 20 pounds right now. This fish can grow to 60 pounds, but won't get that big in this environment.
- They are still experimenting with this fish.
- Tropical plant area – Figs, Sugar Cane, Birds of Paradise.
- Volunteer area is also in this building. Growing Power had 3000 volunteers last year.

Green House #5

- We talked about ladybugs here – not sure if they are just in this house or in all of the green houses.
- We talked about the whole network of fish – all 3 systems. They can hold up to 20,000 gallons of water and also 20,000 fish. It takes about 1 gallon per fish.
- Nasturtium grow directly in the pea gravel here.
- This house's water is heated differently – by solar panels – coils spread the heat.
- Round pool of tilapia – harvest size. About 3,000 in the pool.
- Pool was especially designed for Growing Power by a local company.
- Also a yellow Lake Perch system. This is a cold water fish, so the water need not be heated. However, if you do heat the water you can get faster growth.
- This system came from the Great Lakes Water Institute, UW Milwaukee.
- This is an experimental breeding system, where they can initiate spawning. Growing Power has had it for a couple years.
- This water comes from a storm water capturing system right outside the building. It collects rain from all 6 buildings, plus the other buildings in back. The water is pressurized.

Green House #6

- Research area
- Turned 1 tilapia run into 4 sections.
- Experimenting with using compost to heat water, which should make the perch grow faster.
- This is controlled research done by the school of fresh water sciences – Great Lakes Water Institute.
- Working on breeding their own fish.
- Also got a peek at the giant anaerobic digester that was installed by UW, Green Bay. It is no longer in use. Growing Power has the patent on it. They fed it food waste and it produced acidic acid. Part of the food waste was beer mash from the microbrewery, Lake Front Brewery.

Outside House # 6

- Worm Depository. The beer mash keeps them warm in the winter. They just eat and reproduce here.

House #7

- Heated with compost mix with woodchips on top.
- Plastic on the roofs and polycarbonate plastic sides (this is the same material as the roofs of houses 1-6).
- Year-round growing in these houses, too.
- Starting to peel-off the compost now that it's spring.

Houses #10&11

- Used for growing greens in the winter.

Growing Power's facility is zoned as an Agricultural Site, so they can have live animals. This dates from the period in which there was a plant nursery here (hence the pre-existing greenhouses).

- Goats – hope to turn into milking herd. They winter outside – shedding winter coats right now.
- Also some chickens.

House #14

- Reuse house – where the leftover product goes to be turned back into compost.