WHY URBAN FARMING?

Rapid Urban Growth

US population is over 300,000,000 citizens.
Currently 81% of Americans Live in cities, translating into about 243,000,000 people in and around city centers and growing.
US census projections estimate that by 2050 the total population will reach 438,000,000; without adjustments to urban percentage that number includes almost 350,000,000 people living in a metropolitan area.

Demand for nutritious food

In urban environments, lack of income translates directly to lack of food.
Cost of supply, distribution and importation of fresh food are continuously rising.
Estimates show that the average food product travels as far as 1500 miles from the place it is grown to the place that it is purchased.
Increased production of overly processed foods meet demands but decreases overall human health.

Post Industrial America

Chicago currently has an estimated 70,000-80,000 vacant or abandoned lots and hundreds of unused buildings that could be retrofitted for urban agriculture.
These blighted spaces are dumping grounds for undeveloped or underdeveloped communities and often attract illegal and unsafe activities.
According to Crain's Chicago; unemployment in the city is currently at 11.3%, up from 9.1% one year ago.

Thank you

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THE 21ST CENTURY FARM

Illinois Institute of Technology
Ipro 336

Faculty Advisor: Blake Davis
Sponsor: John Edel

Researching and designing
the future of urban food production

SPRING SEMESTER, 2010

Bilding Informations

1. Mission:

Rehabilitation of unused Chicago buildings for community benefits

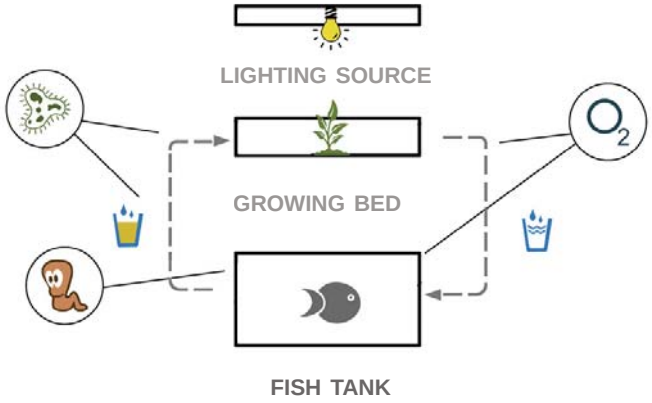
2. Recycling

- Exchange of expertise, materials
- Job Creation
- Experimentation w/ new methods and equipment

3. Building Information

- Former USDA building, meatpacking
- 1400 West 46th Street. Chicago, Illinois 60609
- 93,650 sq. ft. partial 3 story building on 2.98 acres
- 30,000 sq. ft. footprint
- 51% of building to be used for farming operation
- 13'-6" ceiling heights
- 5,000 sq. ft. of roof designated for greenhouses

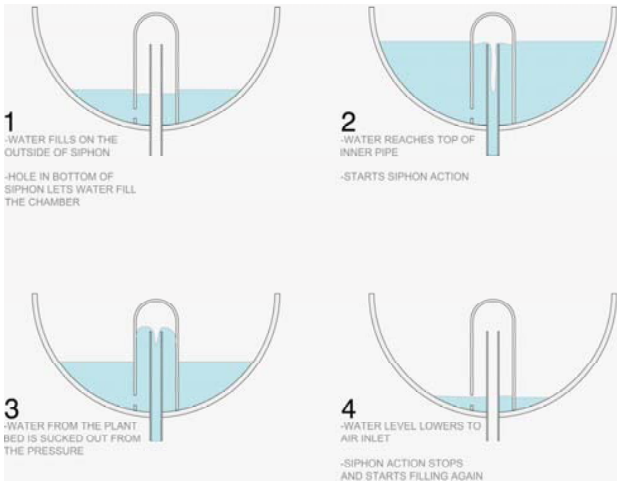
Farming Operation



Aquaponics

= Hydroponics + Aquaculture

Growing Systems - Siphon



Area of work

1. Agriculture Systems

- Research the best growing methods for different agricultural systems.
- Hydroponics, drip irrigation, aeroponics, and aquaponics
- Attempted to grow Shiitake mushrooms.
- Research a closed-loop indoor aquaponic system.
- Researched an aquaculture system

2.Building Mechanical Systems

-Develope a wall system to improve R-value
-Research mechanical systems
-Energy calculations

3. Computer Controls

- Explore ways of automating as much of the farm maintenance as possible.
- Developing a computer program and system of sensors and controls to allow farm managers to view and change environmental variables essential to the aquaponics system

4. Marketing & Business Plan

- Assist in the creation of a working business plan for the sponsors, John Edel and Kristin Ostberg.
- Determinine the revenue generated from various crops
- Determinine operating and capital costs
- Estimate profits from the indoor farm, designing an efficient layout, and finally compiling the data into a business model.
-Research is based in several areas including pricing of crops in various markets, cost of inputs for the farming operation, layout of hydroponic systems, and yields of various crops.