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GROUP URAN DESIGN
HISTORY

US STEEL SOUTH WORKS

EMPTY SINCE 1994
CONDITION

Neighborhood:
1. bad image
2. food desert
3. unemployment
4. low education
5. crime
6. vacant plots

Site:
1. empty
2. nice view to the lake
3. hard border
GOAL
1. urban development on site
2. improve the living condition of the neighborhood
3. diminish the segregation
IMAGINATION

Of course we could imagine a fancy urban development like what SOM already proposed for the site.
BACKGROUND
But we have to live with the fact that the US is in crisis, which is an obstacle to the implementation of SOM's top-down masterplan.

Crisis: Short Of Money
Since there is not enough financial support for a large urban development at once, we need to think in the other direction.
STRATEGY
Growing City:
1. To design a guideline of the growing process;
2. To define several pivotal projects which enable
3. For the rest, just let it grow.
START
The start should be low-cost, temporary, visible, and easy to get local people involved.

URBAN FARMING
- Fresh food
- Farms & plant nursery
- Training
- Job
- Adolescent education
- Tourism

FOOD DESERT
VACANT PLOTS
LOW EDUCATION
UNEMPLOYMENT
CRIME
BAD IMAGE

URBAN FARMS IN CHICAGO
SUPPORT
support from the government

MAYOR EMANUEL LAUNCHES NEW “FARMERS FOR CHICAGO” NETWORK FOR CHICAGO URBAN FARMERS

FOR IMMEDIATE RELEASE
March 15, 2013
URBAN DESIGN

SUPPORT
support from local urban farming organizations

GROWING POWER ACHIEVEMENTS

Altgeld Gardens Urban Farm
The Chicago Lights Urban Farm
Grant Park “Art on the Farm” Urban Agriculture Potager
Iron Street Urban Farm
Jackson Park Urban Farm and Community Allotment Garden
62nd and Dorchester Community Garden
65th and Woodlawn Community Garden
Altgeld Sawyer Corner Farm
Lincoln Square Community Garden
Merchant Park Community Garden
Monticello Avenue Community Garden
Monarch Community Garden
Peterson Garden
Ruby Garden (In Schreiber Park)
GUIDELINE

Farming  Researching  Living

local people  people from outside  mixed population
1. current situation
2. urban farming and planting
3. pivotal projects
4. mixed and balance urban development
PIVOTAL PROJECTS (SEEDS)

Community Center  Market  Agricultural Research Station  Agricultural College

Farming  Researching  Living
Since the seeds are relatively small projects, it's wise to place them where existing elements concentrate so that they can take advantage of the existing elements to save cost or to get stronger identity.
FOCUSING AREA
Strong identity of the ore walls can help bind the pivotal projects into a whole. And the projects may bring added value to the deserted ore walls to avoid it to be demolished.
SPECIFIC LOCATION

Community center:
approximity to the neighborhood

Market:
next to the lakeshore drive; using the ore walls as structure.

Ag research station:
space between the ore walls as enclosed scientific farm; conference with view to the lake; research covering the ecological research of Lake Michigan.
ORE WALL NETWORK

Market Warehouse

College

Research cultivation

Research

Research

guest houses
URBAN DESIGN

DESIGN LAYERS

extend the existing infrastructure in the neighborhood

create linear landscape strips

old factory remanent foundations

pivotal projects
INDIVIDUAL ARCHITECTURAL DESIGN
ARCHITECTURAL DESIGN

ROLE
To lead the transition from farming to researching in the whole growing process.
ORE WALL

Two most relevant elements: farm & ore walls
STRATEGY
ARCHITECTURAL DESIGN
PUBLIC ROUTING

public route on roof 1 (finally to the lakefront)

public route on roof 2 (finally entering the building)
ARCHITECTURAL DESIGN

VIEW
NODES
ARCHITECTURAL DESIGN

PROGRAM

- WAREHOUSE
- STABLE
- RESEARCH
- STABLE
- RESEARCH
- LECTURE

- View to the lake
- Tools to the field
- Harvest from the field

- Wind
- Wind

- Sheep exercising
- Cow exercising
- Entrance garden
PROGRAM

2. Pick your own orchard

1. Entrance garden

3. Livestock excercising area

4. 'Pick your own' orchard

5. Entrance garden
ARCHITECTURAL DESIGN

PROGRAM

[Diagram of architectural design showing office spaces, labs, lobby, entrance garden, and other features.]

[Cross-section drawing of the design showing interior and exterior views.]
main entrance
east facade facing lakefront woods
ARCHITECTURAL DESIGN

PROGRAM
ARCHITECTURAL DESIGN

PROGRAM
view to the courtyard from the visiting route
vertical strawberry farm

milking parlour
holding area
meeting office
office
office
lab
lab
lab
lab
milk room
cow exercising
cow

A
ARCHITECTURAL DESIGN

PROGRAM
ARCHITECTURAL DESIGN

STRUCTURE

WOODEN BEAM TYPES:
- Open web parallel cord trusses
- Laminated veneer lumber beam

open web parallel cord trusses
I-joist
prefabricated floor slab with I-joist
CONSTRUCTION
CONCLUSION

GOAL OF URBAN STRATEGY ACHIEVED:

1. Farming and researching are well combined in the building. It is able to lead the transition from farming to researching.
2. Public routing defined in urban strategy are well integrated in the building.
3. The building provides space not only to researchers from outside, but also to local people from the neighborhood, which help bring a mixed population.

ARCHITECTURAL INTENTION ACHIEVED:

The building emphasizes the combination of urban farming and the ore walls by means of inheriting the nature of the ore walls which is being frame, and using it to frame the urban farming activities. It really becomes a mediator in the combination.
P5 Reflection

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Name of studio: Graduation studio for Complex Projects

Relationship between theme of the studio and my project:
The theme of the studio is to develop the South Chicago (Fig.1), to help Chicago achieve its Global ambitions. The main problem in South Chicago is: since the South Works of US Steel shut down in 1992 (Fig.2), South Chicago has lost its economical anchor and declined. Some new external strength is urgently needed to help the district to recover and to establish its new identity. Due to the economic crisis in the US, however, ambitious and large scale urban projects cannot be done here. SOM's ambitious masterplan for this site has already encountered with many financial and social obstacles.

Under such a circumstance, our team choose the growing city strategy and decide to kick off this growing process with urban farming. The idea originated from the fact that urban farming is relatively low-cost and visible, and it can help eliminate many crucial problems in South Chicago such as food desert, unemployment and adolescent crime. With urban farming, the abundant vacant plots in the area can be quickly made use of. The mayor of Chicago has noticed urban farming as a way to develop problematic areas under crisis and launched new "farmers for Chicago" network for Chicago urban farmers in 2013. There are also many local urban agricultural organizations practicing and having increasingly high achievements. In our opinion, that recent movement provides South Chicago with a big chance.

After the urban farming being developed, not only visitors but also agricultural and life sciences research institutes will be attracted to come to build a research campus here. Later on, commercial and residential projects will also emerge thanks to the campus. In such a way, the area grows step by step towards a balanced and flourishing city(Fig.3).

For my individual architectural design, I concentrate my work on the agricultural research station, which is a "turning point" project in the whole growing process. It
runs an urban farm on the site and also provides field laboratory for students and researchers. It is set up by a university or a college, in collaboration with one of local urban farming organizations. It is the start of the planned research campus and hence it is pivotal to the growing process (Fig. 4).

![Agricultural Research Station](image)

Fig. 3 growing city strategy

Fig. 4 agricultural research station as the turning point

Additionally, this project is not only about the future but also about the industrial past of the area due to its specific location. It is situated right between the ore walls which are the only existing heritage from the previous factory. The strong identity of the rusted ore walls bind our projects together to form a whole network, and our farming-related projects literally give new life to the ore walls with plants and animals. It arouses an interesting conversation between the industry and the post-industrial agriculture.

**Relationship between research and design:**
In research, we found that South Chicago has a bad image and it is confronted with many issues, such as lack of fresh food, diet related diseases, unemployment, low education, violence, drugs, and so on. The community is shrinking and no outside people want to come. Depending on this research, we ask: Why does this area have those problems? How to change the situation? We try to understand it from its history. In fact, "It was a friendly community." South Chicago has its own golden age. In 1901, U.S. Steel opened, which became one of the world's largest steel factories. It attracted many workers, who immigrated here. Later, due to the shifting market of steel, the factory closed in 1992. In 1994, all property are demolished and sold. The site became empty. Workers lost their jobs. The South Chicago declined. Besides, we do researches on the culture, economy, policy, infrastructure, and so-on to better understand the background.

Then we did research and analysis on the masterplan for our site made by SOM. It seems not an idealistic design but quite a practical planning. However, the problems it encountered during its execution let us know that such a top-down urban planning is not a wise strategy in the crisis.

According to all the researches, we defined our design direction: South Chicago requires new investment and new comers to activate the area and to provide jobs, but they don't come at once. We have to find a way to make the gradual change happen. The development should be step by step, and we should always keep the
As for my individual project, I did a lot of research on how a farm works before I designed the shape of the building. The shape, routing, orientation is very much based on the research.

Relationship between methodical line of approach of the studio and the method chosen by me:
The methodical line of approach of the studio is as follows: Firstly, do research & analysis in L, M, S scales, which is from the country to the city and then to the site. Secondly, study the SOM's master plan on the same site. Thirdly, define strategies/ ambitions for the entire site & neighborhood. Fourthly, make urban design and masterplan in groups. Finally, design a specific building individually.

The method chosen by me is based on the studio structure. Firstly, we as a group went to Chicago to do research and analysis on different aspects. We searched lots of information from literature and on the internet. As a summary to the research, three booklets were compiled, respectively called L, M, S Research Book. Secondly, we studied SOM’s master plan and we went to SOM’s office to ask about their opinions and experience on that project. We also recorded the interview. Thirdly, we tried to find a practical yet interesting strategy to solve the problems in South Chicago. Finding a right strategy was not easy. It is very much related to policies, social needs, and financial supports rather than a graphical urban design. We chose to establish a growing city here. We made a guideline of the growing process, and we defined several pivotal projects as "seeds" to enable the process to follow the guideline, but we don’t make a precise, top-down urban planning. We also did case studies to help us understand how strategies work. Fourthly, we made a masterplan with phasing according to our group strategy. We analyzed design of some agricultural research campuses as reference and we visited several urban farming theme park. Finally, I designed a agricultural research center, which is a pivotal project in the master plan. I designed the routing, the space, the shape, the structure, the material and the climate to achieve our urban strategy on a building level.

Relationship between the project and the wider social context:
The project reveals the complexity and difficulty of making a design on urban level in reality, especially in crisis. Architects are not allowed to design everything, they only coordinate and find a way or strategy to let other forces come together and work out their best.
Besides, as I did a lot of research on urban farming in my project, it can be an interesting example to show how urban farming is reintroduced in developed countries like the US while it is being hustled out from cities in developing countries due to urbanization.