Chicago’s Public Soil Treatment Plant

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Main Question:
Can we rethink industrial processes architecturally and make them publicly accessible?

...If so - HOW?
Break down Presentation

CONTEXT IS OF THE ESSENCE
PERSONAL VISION FOR THE WEST SIDE
DISCOVERING URGENCIES
MASTERPLAN VISION
DEFINING THE TYPOLOGY
HELPFUL AND NOT SO HELPFUL REFERENCES
DESIGN + MASTERPLAN: EXPLORING IT
Let’s start contextualizing things first…

CHICAGO!
What’s Chicago like?
Skyscrapers
Extreme weather
Chicago Transit Lines:
CTA’s Major Flaw:
Introduction Vertical Line
The Lime Line
Midcity, Chicago
Why do we call the area *Midcity*?
Focus on the In-between area

suburban

THE INBETWEEN

downtown
Greater Masterplan for Midcity

Breaking the Grid - Superimposing D.L.REFORMA, MEXICO CITY on the Urban Fabric

Breaking the Grid - Superimposing CHAMPS ELYSEES, PARIS on the Urban Fabric

A scheme to follow leads to a less arbitrary way to add. Greater Masterplan for Midcity Centre gives a clear definition where the space in between two different urban patterns, is reached by the meeting of a synergy to be created. This in order to give a chance to going "against the city grid" this nodes is conceived to the Lime Line. The plan for configuration of where the as peculiar situation for each quality of it.

Vacancies have been used this opportunity to give an added value to the whole area. The whole strategy interventions and expansion. Vacancies, either in land and buildings, gave us way, by analyzing the existing programs and then looking at places for future of these neighborhoods and try to enhance them. The strategy starts, this future improvement can be the chance to intervene in a way not to over-
facing from north to south, going through fourteen neighborhoods. We thought that as a CTA, we conceived our project thinking how this new infrastructure can develops around two main themes, the so called "spine" and the "nodes". The Synergy between the two elements brings opportunities that are more the sinergy between the two elements brings about a new way to perceive. The spine is meant to be a long strip running all as a CTA, we conceived our project thinking how this new infrastructure can increase in activity movement and providing all this to the whole area.

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Focus on the Recycle Hub

Recycle hub

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Recycle hub
Midcity largely defined by industrial corridors:
not

able to change a whole
neighbourhood or
behavioural patterns through
social programs
yes

Able to address environmental issues & turn these into assets
the site as a landmark

Perceiving the masterplan intervention as a site that not only provides the area with something to be proud of, but also attracts people from outside.
how could this landmark lead to improvements in the neighbourhoods?

- PRIDE
- EDUCATION
- EMPLOYMENT
- VALUE
reimagining the site as

1. accepting its industrial function and
2. facing urban waste
3. serving the site

industrial corridor 2.0:
urban recycle park
DISCOVERING URGENCIES

ENVIRONMENTAL SYSTEMS AS DESIGN TOOLS
so what are the environmental issues, locally?
pollutant that plays a big factor in the area, on many levels:

*lead contamination*
America's Real Criminal Element: Lead

New research finds Pb is the hidden villain behind violent crime, lower IQs, and even the ADHD epidemic.
Indoors
Children with the highest rates of elevated blood lead levels in Chicago

“neighborhoods dangerously contaminated by lead”
- USA Today

The choices on how best to deal with the problems have been problematic to say the least
- Metro Jacksonville
‘...But the truth is that any neighborhood built before the mid 70s, (when lead based paints were banned in the US) is just as likely to be contaminated and toxic---usually with lead.’
Recycle urgency #1

lead contaminated soil

high urgency because:

01. houses are decaying faster (demolition etc)

02. increase interest in urban farming (austin)

03. affects other resources (water)
how are the urgencies related?
01 soil

01 test

02 evaluate

03 move topsoil

04 bring to site

04 lay topsoil back

05 from site to block

05 treat soil

06 clean soil

lead absorbing plants, fungi turning lead into minerals

based on the block
Masterplan

Area of Intervention

My Proposed Intervention
The Urban Recycle Park

SOIL Treatment Plant

WATER Treatment Plant

Compost Production Plant
ROUTE through the urban park, visiting each treatment plant

CONNECTING THE THREE RECYCLING CENTERS
WHAT IS THE LINK BETWEEN THE LARGER MASTERPLAN AND THE BUILDING?

SMALL SCALE VERSION OF THE MASTERPLAN
DEFINING THE TYPOLOGY

THROUGH A PROCESS THAT TACKLES THE URGENCY OF LEAD POLLUTION IN BACKGARDENS
Concept

museum + soil centre
Two ways to treat the lead-polluted soil:

Cycle A: Mycoremediation  
Cycle B: Phytoremediation
Cycle A: Mycoremediation
Cycle B: Phytoremediation

Identifying point in the cycles
Studying the points & their requirements
Translating these points into spaces
Site Integration determines composition
Site Integration determines composition
Logistics determines composition
Logistics & Public Requirements = Inputs
For finding the right Composition
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For finding the right Composition
Logistics & Public Requirements = Inputs
For finding the right Composition

Underground routing & spaces
HELPFUL AND NOT SO HELPFUL REFERENCES
Agricultural & Industrial buildings
Wineries came closest to my typology
Logistics & Public Requirements = Inputs
For finding the right composition
Underground routing & spaces

Going from this...
To this
LOGISTICS VS PUBLIC
Logistics & Public Requirements = Inputs

For finding the right composition

public flow
logistic flow
static position exposed
depends on which plant you're exposed to

separation by separation in height + coverage system

soil hall dark storage seed green

phytoremediation

SHED
Logistics & Public Requirements = Inputs

For finding the right composition

static posi-exposed

depends on

which plant you’re exposed to

separation by separation in

height + coverage

indirect sunlight

soil hall dark storage

seed green

phytoremedi-mycoremedia

public flow

logistic flow

Approach logistics/public

LABS
SEEDBANK

Logistics & Public Requirements = Inputs

For finding the right composition, public flow, logistic flow depends on which plant you're exposed to.

Separation by separation in height + coverage.

Indirect sunlight, soil, dark storage, seed, green.

Phytoremediation, mycoremediation, labs.
Logistics & Public Requirements = Inputs

For finding the right composition, the public flow, logistic flow, static position, exposure, which plant you're exposed to, separation by separation in height, and covering in indirect sunlight, soil, hall, dark storage, seed, green.

VERTICAL GH
UG exhibition spaces
LABS
Logistics & Public Requirements = Inputs

For finding the right composition depends on which plant you're exposed to.

Separation by separation in height + cov-

Indirect sunlight so soil hall dark- storage

Phytoremedi-mycoremedia-
labs1 labs2

Public flow logistic flow

DARKROOM
Logistics & Public Requirements = Inputs
For finding the right composition
public flow
logistic flow

static position depends on which plant you’re exposed to
separation by separation in height + cover

indirect sunlight
soil hall dark storage
phytoremediation core media labs1 labs2

MIXING HALL
Materials & the importance of easy assembly and recycled materials
Re-using the site

Recycling
- Metal/Steel from warehouses
- Scrap Metal from Cars
Materials & Climate

- Greenhouse glazing
- Perforated metal mesh as shading
- Recycled glass panels as rain-screen
- Frosted polycarbonate
- SIP panels
- Galvanized steel structure
- Glulam beams
- Cross bracing - steel rods
- Steel portal frame
- SIP panels
- Recycled glass panels as rain-screen
- Concrete shell
- Slimdek floor on steel I beams
- Highly insulated shell
- Triple polycarbonate
- Highly insulated sandwich panel

Winter Situation

Summer Situation
Concluding
I believe there is a great future in these new typologies of publicly accessible industrial or agrarian buildings - it might even be the only way to make people more aware of our surroundings and the waste we produce, especially in large cities as Chicago.
Thank you!